REPORT

AMENDED STAGE 1 ABATEMENT PLAN

Ortiz Park Landfill

Santa Fe, New Mexico

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1.0 INTRODUCTION

Golder Associates was retained by the City of Santa Fe Solid Waste Department to provide additional data and an amendment to the Stage 1 Abatement Plan, filed April 30, 2003 (URS, 2003) for the Ortiz Park Landfill, requested by the New Mexico Environment Department Groundwater Quality Bureau (NMED-GWQB) in correspondence dated August 26 2009 (**Appendix A**). The 2003 Ortiz Park Stage 1 Abatement Plan contained commitments to install and monitor groundwater flow and quality in a sentinel well positioned downgradient of the landfill to determine if groundwater had been impacted by wastes in the landfill.

During implementation of investigations for the 2003 Ortiz Park Stage 1 Abatement Plan, three other groundwater monitoring wells were drilled approximately 1000 feet north and 2500 feet west of the Ortiz Park landfill to satisfy New Mexico Solid Waste Management Regulation (NMED-SWMR) groundwater monitoring requirements for the Paseo de Vista Drive landfill, located to the north and west of Ortiz Park. Due to the proximity of the landfills at Ortiz Park and Paseo de Vista Drive, the groundwater data collected from both sites was combined to provide understanding of overall groundwater conditions in the vicinity, and to simultaneously provide data requested by NMED-GWQB for the Ortiz Park landfill and by New Mexico Environment Department's Solid Waste Bureau (NMED-SWB) for the Paseo de Vista landfill.

The Paseo de Vista Drive landfill was closed in 1999 and is regulated by the New Mexico Environment Department's Solid Waste Bureau (NMED-SWB) under the NMED-SWMR. The Ortiz Park landfill was closed prior to promulgation of the NMED-SWMR, this landfill is regulated under the New Mexico Water Quality Control Commission Regulations (NMWQCC) by the NMED-GWQB. Pursuant to landfill closure groundwater monitoring requirements, nine groundwater monitor wells have been completed around the Paseo de Vista landfill. Monitor Well Nos. 1-3 were completed in 1993 (CDM). Due to a change in water table gradient, Monitor Well Nos. 4 and 5 were installed in 1998 (Shomaker, 1998) to improve monitor well network coverage around the landfill. Due to dewatering of monitoring well Nos. 5 and 1 and lack of adequate sentinel well coverage along the downgradient perimeter of the landfill, well Nos. 6,7 and 8 were installed southeast of the Paseo de Vista landfill in June of 2004 (URS, 2004). The Ortiz Park monitoring well (Ortiz Park-1) was also installed in June of 2004.

Significant water level declines in the vicinity of the Ortiz Park and Paseo de Vista landfills has dewatered Paseo de Vista landfill montitoring well Nos. 1, 4 and 5. Paseo de Vista MW-1 was decommissioned in October 2005. Locations of all groundwater monitoring wells installed at Ortiz Park and Paseo de Visa landfills are shown on the vicinity well location map in **Figure 1**.

2.0 2003 ORTIZ PARK STAGE 1 ABATEMENT PLAN ACTIONS

2.1 Monitoring Well Siting and Completion

The above referenced August 26, 2009 NMED-GWQB letter and a follow-on letter dated January 29, 2010 indicate that the Ortiz Park monitoring well is improperly positioned and is equipped with a screen that exceeds NMED specifications for screen length. The 2003 Stage 1 Abatement plan included a discussion of high rates of regional water table decline and a proposed monitoring well design that included penetration and screening the uppermost saturated zone by at least 70 feet. Dedicated variable speed low-flow sampling pumps set in the upper 20 feet of the well water columns were proposed to provide water samples as representative of the uppermost few feet of saturation as possible. Mechanical bridge plugs were also installed below the pumps in each well. Pumps and bridge plugs were to be periodically repositioned deeper to allow continued used of the wells as water levels continue to subside. This well design and sampling approach was also proposed to NMED-SWB for the Paseo de Vista landfill wells. Both agencies approved the proposed well design and sampling method.

The 2003 Ortiz Park Stage 1 Abatement plan (URS, 2003) included a proposed groundwater monitoring well positioned downgradient of locations where chlorinated solvents had previously been detected in groundwater samples from monitoring well No. MW-1, as well as downgradient of a location where low concentrations of solvent vapors had been detected in the landfill during an investigation conducted in 1993 (CDM, 1993). A copy of the proposed well location map (URS, 2003, Figure 3, shown as proposed well PMW-6) is included in **Appendix B**. Copies of data and a map associated with Ortiz Park soil vapor investigations (CDM, 1993 and URS, 2003, Figure 2) are included in **Appendix C.**

The proposed Ortiz Park-1 location in the 2003 Stage 1 Abatement Plan was further formalized in correspondence to NMED-GWQB and physically staked by City of Santa Fe Solid Waste Department and URS personnel at the following approximate coordinates:

- UTM Z13 412,682 E; 3,950,225 N

City of Santa Fe Solid Waste Department and URS personnel met with NMED-GWQB personnel at the Ortiz Park landfill prior to final approval of the monitoring well location and spudding the Ortiz Park well in April, 2004. During the site walk, NMED-GWQ personnel requested that that the well location be moved approximately 500 feet southwest of the proposed location to the following position:

- UTM Z13 412,564 E; 3950,129 N

The Ortiz Park well was installed in the location requested by NMED-GWQB. Well logs, water level histories and completion data, as well as survey control for Ortiz Park well 1 and each of the Paseo de Vista monitoring wells (1-8) is included in **Appendix D**.

2.2 Groundwater Monitoring

Groundwater sampling and analysis was performed at the Ortiz Park monitoring well and the Paseo de Vista landfill monitoring wells in accordance with a combined NMED-GWQB and NMED-SWB groundwater sampling and analysis plan submitted to NMED-GWQB in correspondence dated June 23, 2004 (**Appendix E).** Eight groundwater sampling events were performed on the Ortiz Park monitoring well between July 20, 2004 and April 25, 2006. The initial groundwater sample collected on July 20, 2004 was analyzed for NMED-SWMR Table 1 analytes, including VOC's by EPA Method 8260, Metals by EPA Methods 6010/6020, Primary ions and PCB's by EPA Method 8082. Subsequent quarterly groundwater samples were analyzed for VOC's by EPA Method 8260 and for RCRA 8 metals by EPA Methods 6010/6020. Groundwater level measurements have been maintained at Ortiz Park Well 1 since completion of the Stage 1 sampling plan in April 2006. Cumulative water level data for the Ortiz Park and Paseo de Vista landfill monitoring wells are included in **Table 1**. Cumulative water quality data for the Ortiz Park and Paseo de Vista landfill monitoring wells are included in **Tables 2a, 2b and 2c.**

Groundwater quality data collected from the Ortiz Park monitoring well indicates that Toluene, a regulated compound having an assumed anthropogenic source in this setting, has been detected in declining concentrations ranging from approximately 8% of the regulated limit (58 of 750 micrograms per liter) in the sample collected during the initial sampling event on July 29, 2004 to non-detected (detection limit 0.2 micrograms per liter) in the most recent sample collected on December 21, 2009. Chloroform, also anthropogenic, was detected in the Ortiz Park Well No. 1 sample collected on December 21, 2009 at approximately 1.2% of the regulated limit (1.2 of 100 micrograms per liter); chloroform was also detected in groundwater samples collected from residential wells located at 131 Lugar de Oro and 4000 Graham Ave., as well as from the Alameda Exxon LUST site located to the south of Ortiz Park; detected concentrations were 0.7, 0.2 and 1.5 micrograms per liter, respectively.

Nitrates have been detected in groundwater from wells in the vicinity of Ortiz Park in concentrations approaching or exceeding the regulated limit of 10 milligrams per liter. Nitrate concentrations in the Ortiz Park monitoring well have increased from the initial measurement of 3.7 milligrams per liter to 7.9 milligrams per liter during the period of record for this well. Nitrate concentrations and groundwater gradients have been mapped during each monitoring event at the combined landfill site monitoring well network. Nitrate concentrations have consistently been higher on the eastern (and sidegradient) margin of the landfills and reached peak values in groundwater samples collected from each of the offsite residential wells, as well as from the Alameda Exxon LUST site well. Based upon historical documentation of groundwater gradient reversal from northwesterly to south-southeasterly, a source of nitrates east or southeast of the landfills has been indicated. Additional groundwater geochemistry data and analysis have been developed for wells in the vicinity of the Ortiz Park landfill (Longmire, 2010). Longmire developed several geochemical lines of evidence indicating the presence of an off-site source of nitrates in groundwater emanating from a location to the southeast of the Ortiz Park landfill. Summary discussion and graphical data are included in **Appendix F**. Historical research indicates that a Japanese internment camp was located in the suspected source area of nitrates in groundwater in the vicinity; this facility is suspected as the source of elevated nitrates in groundwater in the vicinity of Ortiz Park.

Groundwater elevation mapping using combined water level data from all Paseo de Vista and Ortiz Park landfill wells has indicated that the Ortiz Park monitoring well is located somewhat cross-gradient from landfill materials and the identified potential contaminant sources within the landfill (chlorinated solvent vapors). Groundwater gradient from the December 21, 2009 groundwater monitoring event is shown on the map in **Figure 2**.

3.0 REQUESTED ADDITIONAL STAGE 1 ABATEMENT PLAN ACTIONS

Representatives of the NMED-GWQB and City of Santa Fe met on February 18, 2010 to discuss issues and desired actions for groundwater monitoring at Ortiz Park. The following individuals attended this meeting:

Alex Puglisi, NMED-GWQB
Bart Faris, NMED-GWQB
Brian Snyder, City of Santa Fe Public Utilities Director
William de Grande, City of Santa Fe Solid Waste Department Director
Lawrence Garcia, City of Santa Fe Solid Waste Department Administrator
Claudia Borchert, City of Santa Fe Water Resources Coordinator
Robert Gallegos, City of Santa Fe Water Utility Environmental Scientist
Clay Kilmer, Golder Associates
Patrick Longmire, Los Alamos National Laboratory, Geochemist
Lee Wilson, Wilson and Associates

During this meeting, NMED-GWQB representatives reviewed the latest information on groundwater gradient and quality presented by the City of Santa Fe and discussed outstanding issues with the Stage 1 Abatement Plan for Ortiz Park. A summary of actions requested by NMED-GWQB pursuant to an Amendment to the Stage 1 Abatement Plan is as follows:

- Installation and monitoring of at least one additional groundwater monitoring well along the southern boundary of wastes in the Ortiz Park landfill; potential requirements for additional wells to be determined with emergent data.
  - Construction of additional groundwater monitoring wells with vertically discrete completions to allow determination of vertical variations in hydraulic head and vertical profiling of potential groundwater contaminants within the aquifer.
- Demonstration of representativeness of groundwater samples obtained from Ortiz Park well No. 1 of groundwater in the uppermost few feet of saturation.
  - Documentation of low flow with small head decline during well purging.
- Sampling and Analysis Plan for Stage 1 Abatement Plan Amendment groundwater monitoring.
- Schedule for completion of requested tasks.
- Health and safety plan for proposed Stage 1 Abatement Plan Amendment actions

The City of Santa Fe has indicated that the following additional tasks will be pursued:

- Completion of detailed file and literature review and hydrogeologic mapping
- Completion of groundwater flow and geochemical modeling
- Completion of additional geochemistry analysis and interpretation

4.0 STAGE 1 ABATEMENT PLAN AMENDMENT – ORTIZ PARK LANDFILL

The amended Ortiz Park Stage 1 Abatement Plan includes information that was included in the 2003 Stage 1 Abatement Plan, augmented by information that has been obtained from the site during Stage 1 Abatement Plan actions that have been performed since 2003.

4.1 Site Map

A map of the site vicinity is included in this submittal in Figure 1. Several other maps are also included that depict various attributes of the site and surrounding vicinity.

4.2 Site History

The former landfill located at Ortiz Park operated as a municipal landfill, approximately between 1954 and 1968. Since no solid waste management regulations were promulgated during that period, the landfill was unregulated. No records of received volumes, weights, or waste types were made; therefore it is assumed that the landfill could have received all types of household, city and manufacturing wastes. Due to its antiquity, the Ortiz Park landfill was not closed in accordance with requirements in the SWMR. No final grading, liner, cap, or other measures designed to limit percolation of water into the buried wastes and leachate contamination were implemented. The site was developed with soccer fields and irrigated from 1987 to 1993, enhancing the potential for leachate generation. A single groundwater monitoring well (Ortiz Park No. 1 was installed approximately 500 feet southwest of municipal solid waste (MSW) fill in Ortiz Park in April, 2004 and monitored for two years, in accordance with a schedule set forth for the April 30, 2003 Stage 1 Abatement plan.

4.3 Nature of Discharges and Potential Groundwater Pollution

Regulated contaminants (PCE) were detected in groundwater monitor well MW-1 in close proximity to Ortiz Park; however available information is inadequate to conclude that the contaminants detected in samples from MW-1 originated from the Ortiz Park landfill. It has been mentioned that groundwater flow direction is now toward the southeast; therefore MW-1 is now upgradient from Ortiz Park. The groundwater samples collected form Ortiz Park monitoring well No. 1 on December 21, 2009 were found to contain low concentrations of Chloroform, which was also detected in other off-site wells sampled during this monitoring event. Chlorinated solvent vapors have been detected in adsorbed and vapor phases within wastes at the Ortiz Park landfill. Nitrates that have been detected in groundwater samples from wells in the vicinity of Ortiz Park are currently believed to have emanated from a source located to the southeast of the landfill.

4.4 Summary of Previous Contaminant Investigations

Camp, Dresser and McKee (CDM) performed investigations of the Ortiz Park landfill in 1993. Soils underlying the fill and vapors in the fill, in ambient air above the fill, and in soils surrounding the fill were sampled and analyzed for toxic and hazardous constituents.

CDM sampled soils at five locations under the fill on Nov 29 – Dec 1, 1993, using Hollow-Stem Auger and split spoon sampling techniques and analyzed for ***adsorbed phase*** contaminants, including hydrocarbons, volatile organic compounds (VOC's), toxic metals and inorganic nitrogen species. Analyses of the soil samples indicated that low concentrations of adsorbed petroleum hydrocarbons and VOC's are present in limited areas under the fill; however the concentrations of hydrocarbons and VOC's that were detected were well below safe "Soil Screening Levels" that have been developed by NMED-GWQB (2000). With the exception of a low concentration of silver detected in one soil sample, no toxic metals were detected in the soils sampled during this survey.

CDM performed sampling and analyses of potential ***vapor phase*** contamination in and around the fill area using Direct Push Technology (DPT) techniques on April 13-16, 1993. Vapor samples vapors were collected from 50 locations; sample depths ranged from 7 feet to 20 feet below grade. The majority of the samples (45) were analyzed for landfill gases (LFG) using an on-site mobile laboratory; five of the

samples were also analyzed for VOC's using the mobile lab. The LFG suite included nitrogen (N2), carbon dioxide (CO2), oxygen (O2), and methane (CH4); the VOC analyses were consistent with techniques set forth in EPA Method 8010/8020. Later soil vapor sampling, also using DPT techniques, was conducted on November 23 1993. Soil vapor samples were collected from depths of three feet at four locations (all presumably in fill or soil cover) and analyzed for VOC's using EPA Method TO-14. A number of hydrocarbons and chlorinated hydrocarbon species were detected in potentially significant concentrations. Vinyl chloride (a degradation product of several dense chlorinated solvents) was detected in concentrations as high as 1200 parts per billion (ppb volume to volume). Since these samples were collected from depths of only three feet, it is unclear how deeply these contaminant vapors may have penetrated into substrates beneath the landfill.

A summary of the results of the LFG investigations is presented in **Appendix C** (URS, 2003, Figure 2). The results of CDM site characterization investigations at Ortiz Park are summarized as follows:

- Sampling and evaluation of impacts to soils beneath the Ortiz Park landfill found limited evidence of toxic metals contamination; only silver was detected in a single sample at a concentration well below the Risk Based Screening Level set by NMED.
- Sampling and evaluation of impacts to soils beneath the Ortiz Park landfill found low-level concentrations of adsorbed VOC's and petroleum hydrocarbons in limited areas. Concentrations of contaminants were well below Risk Based Screening Levels set by NMED.
- Sampling and analysis of vapors contained in the fill and in the soils surrounding the Ortiz Park landfill indicate that significant concentrations of methane are present in landfill. Methane gas does not appear to be present in soils surrounding the fill area.
- Samples of vapors contained in the fill and soil cover were found to contain a number of hydrocarbons, chlorinated solvents and chlorinated solvent degradation products. Concentrations of some of the contaminants exceed 1000 ppb. Vertical distribution of the vapor contaminants beneath the landfill is unknown.

4.5 Geology and Hydrogeology

Surficial geology of the Santa Fe area was presented by Spiegel and Baldwin (1962); this map was modified to show current well and surface data and is shown in **Figure 3**. Shallow subsurface geologic units at Ortiz Park consist of semiconsolidated sand, silt and gravel of the Tertiary Tesuque Formation. The Tesuque formation is a well stratified unit; in the vicinity of Ortiz Park the dip of Tesuque beds is variable, but is generally to the northwest between 7 and 16 degrees (Spiegel and Baldwin, 1962). A hydrogeologic cross section was prepared by Lee Wilson and Associates (2010) and is shown in **Figure 4**. The northwest direction of dip and variable texture of beds within the Tesuque Formation results in significant anisotropy in horizontal hydraulic conductance of the shallow water-bearing zone. Hydraulic conductance in the direction of bedding strike (northeast to southwest) is likely multiple orders of magnitude higher than hydraulic conductance in the updip and downdip directions (northwest and southeast); this condition may result in deflection of contaminant flow somewhat southwest of groundwater gradient direction flowlines.

Lee Wilson prepared the following geologic and hydrogeologic discussion of the site and recommendations for further investigation (Lee Wilson, 2010):

> *"The Tertiary Tesuque Formation is exposed or thinly buried throughout the area of interest, and extends to below the depth of the deepest local wells. The formation is the primary aquifer of the region and generally consists of poorly sorted and partly consolidated bedded deposits that are predominantly silty sand interlayered with gravels and gravelly sands, with some well-sorted sands and sandy clay beds.*
>
> *Figure 4 is a conceptual geologic cross-section of the Ortiz Park area which is located approximately perpendicular to the strike of the Tesuque beds, which is north-northeast. The*

cross section is drawn with a vertical exaggeration of 3x. The cross section shows lithology at MW-7 and Ortiz Park #1 wells with a 13 degree dip to the west-northwest. The 13 degree dip is the average of several measurements shown for the Ortiz area in Vincent Kelley's geologic map. Other than at MW-7 and Ortiz Park #1, the lithology shown is diagrammatic. In particular, whether clays and silts are continuous in lateral extent, as shown on the section, is not established.

The two closed landfills are located on Tesuque gravels. The former Internment Camp and the CCC camp prior to that also were located on the Tesuque outcrop, with irrigated fields on the alluvial surface in the valley. The location of the Camp is off the line of the cross-section, but its geologic position is shown on Figure 4.

The vadose zone in the area of Ortiz Park is up to 400 feet thick. Ground water infiltrating from the surface should travel preferentially through the more permeable units rather than moving directly downward across less permeable units. The expected effect is to deflect the impact of recharge to the west-northwest of the point of infiltration and probably to spread the recharge over a larger area than would occur in the absence of dipping beds.

Prior to large-scale pumping of groundwater in the Santa Fe area, the groundwater gradient was west-northwest, approximately normal to the strike, and toward discharge points on the Rio Grande. Data on Figure 2, based on a report by Golder and Associates, shows the ground water gradient under current conditions to be to the southeast, under the influence of pumping by City wells. Golder reported that gradients near the landfill changed from WNW to SE within the 5-year period between 1993 and 1998. The change in flow direction is an expected consequence of ground water pumping, but the timing of the change has not been confirmed.

Calculations based on simple geometry can indicate the effect of dipping beds on flow directions and velocities. The local aquifer tests produce values of permeability (hydraulic conductivity) of typically about 3.5 ft/day, which would represent flow along the permeable zones. The permeability across the bedding planes is probably not more than 1/50th of the measured value; 1/250th may be a good estimate and the value could reasonably be as low as 1/2500th. The 1/50th value is based on experience; 1/250th resulted from Glenn Hearn's (1980) model in the Tesuque area and is consistent with experience, and 1/2500th was the value that resulted from Glenn Hearn's pumping test at Tesuque. For current conditions, with a SE gradient and a bedding strike of about 40NE, the flow would be due south assuming and a mid-range a conductivity ratio of 1/250. With a ratio of 1/50 the flow direction would be approximately south-southeast. With a ratio of 1/2500 the flow would be approximately along the strike of bedding to the southwest. The corresponding flow velocities are calculated at between 20 and 80 feet per year, with the lowest values being associated with the lowest vertical permeability. The calculated velocity is less than the value of nearly 300 ft. per year calculated in previous reports, because those calculations did not take into account flow across low-permeability beds.

At the time of the Internment Camp, contaminants reaching groundwater would have moved along the WNW flow gradient, and across the dipping beds. Velocities would likely have been even less than 20 feet per year. Note that these calculations of velocity assume an effective porosity of 0.05; if that value is low, velocities are slower than noted here, but if there are preferential flow paths (e.g. fractures in the lower permeability units), velocities could be somewhat higher.

In summary, with an anisotropic aquifer that has been impacted by significant pumping and probably by multiple contamination sources, it is difficult and may prove impossible to fully account for the pathways from potential sources to observed well concentrations. Still, it seems evident that high nitrate water located at the northern fringes of the Ortiz and Paseo de Vista landfills could have originated from sewage discharges at the Detention Camp which flowed westward following the predevelopment flow gradient, and that lower nitrate levels south of this

location could result from the same source but reflect the turn of the flowpaths in response to pumping of the City wells."

4.6 Groundwater Gradient Direction

It has been mentioned that significant water table decline has occurred and that the direction of groundwater flow has changed during the period of record for post-closure groundwater monitoring performed for the Paseo de Vista Landfill (1993-2003). Based upon head data collected from Monitor Well Nos. 1-3 in 1993, groundwater flow direction in the vicinity was to the west or northwest (SMA, 2002, Figure 2). This assessment is consistent with the regional water table gradient mapped by the US Geological Survey and New Mexico State Engineer Office and the (Spiegel and Baldwin, 1964 and Mourant, 1980). Current groundwater gradient is depicted in the water table map shown in **Figure 2** using December 21, 2009 water level data.

Tabular and graphical summaries of available water level data and trend analyses for landfill monitoring wells are included in **Table 1** and **Appendix D.**

5.0 PROPOSED ADDITIONAL ORTIZ PARK STAGE 1 ABATEMENT PLAN ACTIONS

The City of Santa Fe proposes to implement actions to refine understanding of the site hydrogeology and groundwater quality, to determine whether regulated compounds have emanated from the landfill into groundwater and to assess the level of threat to groundwater and to human receptors in the area and using this analysis to identify the best location to locate an additional groundwater monitoring well downgradient of potential sources of contaminants that have been identified in the landfill. Installation of an additional groundwater monitoring well would be followed by two years of quarterly groundwater sampling and analysis to determine if contaminants are present in groundwater downgradient from the landfill.

5.1 Tasks 1-5 Proposed Additional Hydrogeologic Studies Pursuant to Monitor Well Siting

Further investigations of hydrogeology are warranted prior to determining whether the existing monitoring well network is or can be made adequate and, if not, where one or more additional wells should be located. Among the tasks **proposed for the next six months** are the following. The City of Santa Fe proposes the following tasks pursuant to evaluating the existing well network and/or siting of one or more additional groundwater monitoring wells at Ortiz Park:

Task 1.—Evaluation of pumping equipment in Ortiz Park well No. 1.

Due to the length of the well screen in Ortiz Park well No. 1, uncertainty has been expressed regarding the validity of groundwater samples that have been collected from this well. The City of Santa Fe proposes to purge Ortiz Park well No. 1 using the minimum possible flow rate from the existing pump and to simultaneously monitor the pumping water level to determine whether low-flow purging (<1 ft of water level decline during purging) can be accomplished with the existing equipment. If acceptably low flow rate and drawdown can be accomplished with existing equipment, groundwater purging and sampling will continue in accordance with past sampling practices at this well. If this evaluation indicates that acceptable low flow rate and drawdown is feasible, the City of Santa Fe proposes to collect a groundwater sample from the well and to analyze for VOC's and RCRA-8 metals; this information would be integrated into background data that will be developed pursuant to siting for Ortiz Park monitoring well No. 2. If low-flow purging cannot be accomplished with the existing pump, the City of Santa Fe proposes to reequip this well with a dedicated inert gas powered bladder pump to allow micro-purging and sampling of the well. The well would be reequipped during operations to install pumps in proposed Ortiz Park monitoring well No. 2.

Task 2.—Enhanced groundwater gradient mapping

Review and enhancement of water level maps. The primary work will be to process the extensive water level data base maintained by the New Mexico Bureau of Mines to map the pre-development and current water tables, and to also map the changes in gradient that occurred in response to Santa Fe pumping. Screened intervals of the monitoring wells will be considered in this evaluation, as will data in the original reports that identified the change in gradient. A round of water level monitoring may be undertaken in Spring 2010. Differences in drawdown rates in different wells will be reviewed to determine if the differences can be explained by geology.

Task 3.—Review and update of geologic cross section and subsurface stratigraphic maps

The primary work will be to obtain all available good quality logs for the area and use them to improve Figure 4. Recent published and unpublished geologic and geophysical reports will be consulted to obtain additional hydrogeologic insights.

Task 4.—Review and enhancement of calculations of velocity and flowpath directions

The primary effort will be to revisit the calculations reported above, using the new insights gained in tasks 1 and 2. There also will be considerable effort toward using isotope and water chemistry data

to determine if the flow interpretations are reasonable, and to provide insights on whether the data indicate more than one nitrogen source. Consideration is being given to using a groundwater flow model that incorporates dipping beds to confirm the analytical conclusions.

Task 5.—Evaluate hydrologic factors of importance to monitoring.

This will include a close look at the Ortiz monitoring well to determine if it is suitably located to provide information on leachate from the landfill, and whether sampling techniques can improve upon the reliability and usefulness of water quality data obtained from the well. This task will also provide input to possible designs of future monitoring wells by considering how various alternative designs propagate stresses to the aquifer and what that means in terms of being able to obtain representative data from particular depths in the aquifer.

The proposed investigations will be used to refine and confirm a drilling location for the proposed additional groundwater monitoring well. Based upon currently available data, it is anticipated that the well will be located near the southern boundary of Ortiz Park at the location shown in **Figure 5**. Provisional coordinates for the anticipated location are as follows:

- UTM Z13 412,781 E; 3,950,337 N

5.2 Task 6 Monitor Well Drilling and Completion

The City will procure well drilling through a rigorous and detailed set of General and Technical Provisions and Well Specifications that set forth the drilling contractor's responsibilities with regard to all aspects of well drilling, completion, development and equipping. It is anticipated that the proposed monitor well will be drilled using direct air-rotary drilling and casing advance techniques; casing advance methods will be required to maintain hole stability during well completion.

The proposed well would be drilled using nominal 8-inch ID drive casing and completed as a nested well using 3 lengths of 2-inch Schedule 40 flush joint well casing with 20-foot lengths of 0.010 slot screen. Screens would be arrayed from the uppermost zone of saturation (anticipated water level is approximately 408 feet below grade) to a depth of approximately 485 feet below grade. Intervals between the screens would be sealed with grout to prevent movement of fluids between completed intervals. The well would be completed according to a general design depicted in **Figure 6.**

The well annular fill would consist of 10-16 or 10-20 grade silica sand, bentonite seals between and above well screens and grout sealant to land surface. Well surface completions will consist of iron surface protective casing equipped with locking caps set in reinforced concrete slabs and protected by iron pipe traffic bollards set in the concrete slabs.

The well would be drilled through the vadose zone using no special measures for capturing drill cuttings; however when drilling advances into the saturated zone where regulated contaminants may be present, cuttings and produced water would be captured and segregated. The segregated drill cuttings and produced water would be laboratory tested for contamination and either released and thin-spread on location, or transported to an approved disposal facility, if action-level contamination is present.

The anticipated well drilling contract will contain provisions to require rigorous collection and preservation of depth-indexed formation-representative drill cutting samples as the drill bit is advanced for each new well. Drill cuttings will be examined and described by a qualified hydrogeologist and a detailed lithologic log will be prepared describing formation depth, texture, mineralogy, color, degree of lithification, void ratio and evidence of contamination. The lithologic log for each well will include a graphical depiction of final well completion details, including well depth, lengths of blank casing and screen, screen slot size, gravel pack grade and annular seal details, as well as water level.

Upon completion of the proposed monitor well, vertical and horizontal controls will be established for the new well by a Registered Land Surveyor.

5.3 Ortiz Park Monitor Well No. 2 Groundwater Purging and Sampling

Each of the 3 completions of the proposed well would be equipped with a dedicated inert gas-operated bladder pump, set within the screened interval of each 2-inch well completion. Water samples would be "micro-purged" to facilitate collection of water samples from the uppermost zone of saturation in the upper completion and to facilitate collection of formation representative water samples from the deeper completions.

Upon completion, water samples would be collected from each new well and analyzed for SWMR Subsections A and C analytes. Results of analyses would be used for initial groundwater monitoring and reporting to NMED-GWQB for NMWQCC regulation compliance.

The City of Santa Fe proposes to provide documentation of completion of the proposed groundwater monitoring well in a submittal that includes:

- Well logs and as-built information identifying drilling method, depths and diameter of drilled hole, depths, placements and material specifications for all materials used in construction of the well
- Survey coordinates for horizontal and vertical position of the wellhead and land surface of the new well provided by a New Mexico Registered Land Surveyor
- Specifications and settings of all dedicated sampling pumps

5.4 Task 7 Proposed Groundwater Monitoring and Reporting Program

The City proposes to implement a two year program of quarterly groundwater monitoring for the proposed new groundwater monitor well proposed in this Amended Stage 1 Abatement Plan. Groundwater gauging, sampling and analysis of existing Ortiz Park monitoring well No. 1 will also be performed. Current semiannual groundwater monitoring at the Paseo de Vista landfill monitoring well network will continue and data from this program will be combined with the Ortiz Park well data for Amended Stage 1 Abatement Plan data compilation, reduction, interpretation and reporting. The proposed groundwater monitoring includes 8 monitoring events during the initial two years; water levels and water samples will be collected from the new and existing Ortiz Park wells and samples will be analyzed for NMED-SWMR Subsections A and C parameters, including VOC's SVOC's PCB's, metals and radionuclides. If no constituents of concern are identified during the initial 4 groundwater monitoring events, it is anticipated that the City of Santa Fe will request that laboratory analyses include the NMED-SWMR Minimum Alternative Parameters; a list of these parameters is included in Appendix G. Proposed sample locations, dates and analytical methods are summarized as follows:

Proposed Sample Locations, Dates and Analytical Methods
Ortiz Park Amended Stage 1 Abatement Plan.

Date	OP-1	OP-2 (shallow)	OP-2 (middle)	OP-2 (Deep)	PDV-7	PDV-8
Quarter-1	A/C	A/C	A/C	*A/C	A/C	A/C
Quarter-2	A/C	A/C	*A/C	*A/C		
Quarter-3	A/C	A/C	*A/C	*A/C	MAP	MAP
Quarter-4	A/C	A/C	*A/C	*A/C		
Quarter-5	8260/6010	8260/6010	*8260/6010	*8260/6010	MAP	MAP
Quarter-6	8260/6010	8260/6010	*8260/6010	*8260/6010		
Quarter-7	8260/6010	8260/6010	*8260/6010	*8260/6010	MAP	MAP
Quarter-8	8260/6010	8260/6010	*8260/6010	*8260/6010		

Notes:

A/C = NMED-SWMR Subsections A and C analytes and methods
8260/6010: VOC's by EPA Method 8260, RCRA 8 Toxic Metals by EPA Method 6010
MAP = NMED-SWMR Minimum Alternative Parameters
*Sample analyzed only if regulated compounds detected in sample from shallower completion

The City of Santa Fe proposes to provide documentation of quarterly groundwater monitoring with report deliverables that include:

- Cumulative water level and trend data for all monitoring wells in the Ortiz Park and Paseo de Vista landfills
- Cumulative water quality data for all monitoring wells in the Ortiz Park and Paseo de Vista landfills
- Maps of groundwater gradient and isoconcentrations of potential constituents of concern
- Discussion of interpretation of groundwater flow and quality data with conclusions of projected geometry of potential contaminants, groundwater flow direction and velocity and risk to receptors
- Recommendations for further Stage 1 Abatement Plan actions

5.5 Schedule For Proposed Additional Stage 1 Abatement Plan Actions

The City anticipates that off-site domestic well measurements can be initiated within 10 working days of receipt of approval of this Amended Stage 1 Abatement Plan. Completion of proposed Tasks 1-5 data analysis, groundwater mapping and formal proposal for final monitoring well location and delivery of raw data to NMED-GWQB would require an estimated 120 days.

Groundwater monitor well specifications can be finalized and a drilling services solicitation can be transmitted to prospective drilling contractors within 155 days of receipt of NMED-GWQB approval of the Amended Stage 1 Abatement Plan. Selecting a drilling contractor and getting a contract in place is expected to require approximately 60 days. Completion of the proposed groundwater monitoring well, as well as initial groundwater sampling and analysis will require approximately 90 days. Based upon these assumptions, it is anticipated that an As-Built Report detailing all drilling and well completion activities can be delivered 275 days from Abatement Plan approval. The initial quarterly groundwater monitoring report can be delivered 320 days from receipt of NMED approval of the Abatement Plan. The proposed schedule is summarized as follows:

Schedule of Task Completion
Ortiz Park Amended Stage 1 Abatement Proposed Tasks

Task Number	Task Description	Time (days) from Stage 1 Plan Approval
	Approval of Proposed Stage 1 Abatement Plan Actions	0
Tasks 1-5	GW investigation, gradient mapping well siting recommendation	120
Task 6a	Solicitation for well drilling distribution	155
Task 6b	Completion of proposed groundwater monitoring well	245
Task 6c	Delivery of well drilling as-built documentation	275
Task 7a	Completion of initial groundwater monitoring event	275
Task 7b	Delivery of report on initial groundwater monitoring event	320

5.6 Quality Assurance Protection Plan

The City proposes to utilize EPA-approved laboratories for all analytical work to be performed pursuant to the Amended Stage 1 Abatement Plan. All laboratory methods proposed for analyses of groundwater samples provide detection limits that are at or below regulated Maximum Contaminant Levels for all potential groundwater contaminants that may be discovered during the proposed investigations. Sampling and analytical methods will be consistent with the sampling and analytical techniques listed in Subsection B of Section 20.6.2.3107 NMAC and with Section 20.6.4.10 NMAC of the Water Quality Standards for Interstate and Intrastate Streams in New Mexico (20.6.4 NMAC), for all work to be conducted pursuant to this Amended Stage 1 Abatement Plan.

5.7 Site Health and Safety Plan

A site specific Health and Safety Plan (HASP) has been prepared to cover all tasks anticipated in this Amended Stage 1 Abatement Plan, including drilling, sampling and associated activities. The HASP will remain in effect throughout the duration of all work set forth in this Abatement Plan. A copy of the HASP is included with this submittal in **Appendix H**.

6.0 REFERENCES

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TABLES

TABLE 1
HEAD DATA
PASEO DE VISTA LANDFILL
GROUNDWATER MONITOR WELLS

Monitor Well Number	Date	MP Elev. (ft)	Water Level (ft)	Water Table Elev. (ft)	Well Depth (ft)	Water Column (ft)	Screen Interval	Comments
MW-1	04/07/93	7021.69	335.50	6686.19	380	44.50	327-367	377 TD (CDM 1993 Log), 386 TD (SMA 2002 rpt)
MW-1	08/30/93		342.03	6679.66		37.97		No pump in well
MW-1	12/20/93		342.66	6679.03		37.34		
MW-1	04/18/94		343.28	6678.41		36.72		
MW-1	01/08/97		349.99	6671.70		30.01		
MW-1	07/29/98		347.99	6673.70		32.01		
MW-1	08/20/98		352.29	6669.40		27.71		
MW-1	08/24/98		352.96	6668.73		27.04		
MW-1	12/20/00		360.40	6661.29		19.60		
MW-1	04/19/01		360.59	6661.10		19.41		
MW-1	06/14/01		361.20	6660.49		18.80		
MW-1	02/01/02		363.40	6658.29		16.60		
MW-1	04/17/03		368.48	6653.21		11.52		*3.95 ft/yr wl decline 2001-2003*
MW-1	07/08/03		368.98	6652.71		11.02		
MW-1	01/08/04		370.55	6651.14		9.45		
MW-1	08/09/04	7024.71	dry	dry		dry		*New well survey: MP(inner casing)= top casing-0.45 ft*
MW-1	--	--	--	--	--	--	--	***Well Abandoned 10/05***
MW-2	04/07/93	6955.95	270.00	6685.95	363	93.00	313-353	363 TD (CDM 1993 Log), 326 TD (SMA 2002 rpt)
MW-2	08/30/93		274.45	6681.50		88.55		Pump setting unknown
MW-2	12/20/93		273.18	6682.77		89.82		
MW-2	04/18/94		275.50	6680.45		87.50		
MW-2	01/08/97		279.80	6676.15		83.20		
MW-2	07/17/98		278.50	6677.45		84.50		
MW-2	07/29/98		278.11	6677.84		84.89		
MW-2	08/20/98		280.13	6675.82		82.87		
MW-2	08/24/98		280.55	6675.40		82.45		
MW-2	12/20/00		284.83	6671.12		78.17		
MW-2	04/19/01		285.82	6670.13		77.18		
MW-2	06/14/01		285.98	6669.97		77.02		
MW-2	02/01/02		287.36	6668.59		75.64		
MW-2	04/17/03		290.11	6665.84		72.89		*2.15 ft/yr wl decline 2001-2003*
MW-2	07/08/03		291.33	6664.62		71.67		
MW-2	01/08/04		292.61	6663.34		70.39		
MW-2	07/29/04	6955.53	293.28	6662.25		69.72		*New well survey: MP(sounding tube)= top casing-0.34 ft*
MW-2	09/16/04		293.42	6662.11		69.58		
MW-2	12/07/04		293.73	6661.80		69.27		
MW-2	01/25/05		294.07	6661.46		68.93		
MW-2	03/10/05		294.29	6661.24		68.71		
MW-2	10/04/05		294.54	6660.99		68.46		*2*
MW-2	11/06/06	6955.87	296.31	6659.56		66.69		
MW-2	05/18/07	6955.87	297.57	6658.30		65.43		
MW-2	02/20/08	6955.87	296.96	6658.91		66.04		
MW-2	10/17/08	6955.87	297.59	6658.28		65.41		
MW-2	05/12/09	6955.87	297.13	6658.74		65.87		
MW-2	12/21/09	6955.87	297.35	6658.52		65.65		
MW-3	04/07/93	6931.12	3.00	6928.12	351	348.00	301-341	351 TD (CDM 1993 Log), 321 TD (SMA 2002 rpt)
MW-3	08/30/93		245.61	6685.51		105.39		pump setting unknown
MW-3	12/20/93		246.02	6685.10		104.98		
MW-3	04/18/94		246.38	6684.74		104.62		
MW-3	01/08/97		250.21	6680.91		100.79		
MW-3	07/17/98		249.70	6681.42		101.30		
MW-3	07/29/98		249.98	6681.14		101.02		
MW-3	08/20/98		252.28	6678.84		98.72		
MW-3	08/24/98		251.12	6680.00		99.88		
MW-3	12/20/00		254.20	6676.92		96.80		
MW-3	04/19/01		254.98	6676.14		96.02		
MW-3	06/14/01		255.28	6675.84		95.72		
MW-3	02/01/02		256.35	6674.77		94.65		
MW-3	04/17/03		258.83	6672.29		92.17		*1.92 ft/yr wl decline 2001-2003*
MW-3	07/08/03		259.27	6671.85		91.73		
MW-3	01/08/04		261.24	6669.88		89.76		
MW-3	07/29/04	6931.04	262.09	6668.95		88.91		*New well survey: MP(sounding tube)= top casing-0.59 ft*
MW-3	09/16/04		262.41	6668.63		88.59		
MW-3	12/07/04		262.86	6668.18		88.14		
MW-3	01/25/05		263.03	6668.01		87.97		
MW-3	03/10/05		263.48	6667.56		87.52		
MW-3	10/04/05		264.04	6667.00		86.96		
MW-3	11/06/06	6931.63	265.75	6665.88		85.25		
MW-3	05/18/07	6931.63	266.69	6664.94		84.31		
MW-3	02/20/08	6931.63	267.23	6664.40		83.77		*Measured from top of steel casing*

TABLE 1
HEAD DATA
PASEO DE VISTA LANDFILL
GROUNDWATER MONITOR WELLS

Monitor Well Number	Date	MP Elev. (ft)	Water Level (ft)	Water Table Elev. (ft)	Well Depth (ft)	Water Column (ft)	Screen Interval	Comments
MW-3	10/16/08	6931.63	267.42	6664.21		83.58		*Measured from top of sounding tube*
MW-3	05/12/09	6931.63	267.47	6664.16		83.53		*Measured from top of sounding tube*
MW-3	12/21/09	6931.63	267.68	6663.95		83.32		*Measured from top of sounding tube*
MW-4	07/17/98	7014.98	309.06	6705.92	352	42.94	322-352	Shomaker 1998 well completion data
MW-4	07/29/98		334.05	6680.93		17.95		Pump setting: 342 ft (1.5 ft water above pump)
MW-4	08/20/98		327.78	6687.20		24.22		
MW-4	08/24/98		327.83	6687.15		24.17		
MW-4	12/20/00		332.85	6682.13		19.15		
MW-4	04/19/01		333.68	6681.30		18.32		
MW-4	06/14/01		334.11	6680.87		17.89		
MW-4	02/01/02		335.90	6679.08		16.10		
MW-4	04/17/03		340.52	6674.46		11.48		*3.42 ft/yr wl decline 2001-2003*
MW-4	07/08/03		341.25	6673.73		10.75		*pump removed due to inadequate water column*
MW-4	01/08/04		342.71	6672.27		9.29		
MW-4	07/29/04	7014.28	346.90	6667.38		5.10		*New well survey: MP = top casing*
MW-4	09/16/04		348.47	6665.81		3.53		
MW-4	12/07/04		348.29	6665.99		3.71		
MW-4	01/25/05		348.46	6665.82		3.54		
MW-4	03/10/05		348.79	6665.49		3.21		
MW-4	10/05/05		350.74	6663.54		1.26		
MW-4	11/06/06		353.42	6660.86		-1.42		
MW-4	05/18/07		354.99	6659.29		-2.99		*Measured residual water column: 1.0 ft*
MW-4	02/20/08		dry			0.00		*Well dry at 365.02 ft below top steel casing*
MW-5	07/17/98	6993.55	324.34	6669.21	340	15.66	310-340	Shomaker 1998 well completion data
MW-5	07/29/98		317.97	6675.58		22.03		Pump setting: 339 ft (7.3 ft water above pump)
MW-5	08/20/98		296.18	6697.37		43.82		
MW-5	08/24/98		321.13	6672.42		18.87		
MW-5	12/20/00		324.96	6668.59		15.04		
MW-5	04/19/01		325.99	6667.56		14.01		
MW-5	06/14/01		326.49	6667.06		13.51		
MW-5	02/01/02		328.09	6665.46		11.91		
MW-5	04/17/03		331.67	6661.88		8.33		*2.84 ft/yr wl decline 2001-2003*
MW-5	07/08/03		332.50	6661.05		7.50		*pump removed due to inadequate water column*
MW-5	01/08/04		333.89	6659.66		6.11		
MW-5	08/09/04	6990.09	337.16	6652.93		2.84		*New well survey: MP = top casing*
MW-5	09/20/04		337.29	6652.80		2.71		
MW-5	12/07/04		337.98	6652.11		2.02		
MW-5	01/25/05		338.25	6651.84		1.75		
MW-5	03/11/05		338.80	6651.29		1.20		
MW-5	10/04/05		339.60	6650.49		0.40		
MW-5	11/09/06		340.70	6649.39		-0.70		
MW-5	05/18/07		dry			0.00		***Well Dry -- 5/18/07***
MW-5	02/20/08		dry			0.00		*Well dry at 343.41 ft below top steel casing*
MW-6	07/29/04	7016.64	350.17	6666.47	400	49.83	320-400	*New well survey: MP(sounding tube)= top casing-0.05 ft*
MW-6	09/20/04		350.88	6665.76		49.12		
MW-6	12/07/04		354.59	6662.05		45.41		
MW-6	01/25/05		355.53	6661.11		44.47		
MW-6	03/10/05		356.20	6660.44		43.80		
MW-6	10/05/05		358.47	6658.17		41.53		
MW-6	11/09/06		355.80	6660.84		44.20		
MW-6	05/18/07		359.90	6656.74		40.10		
MW-6	02/20/08		361.15	6655.49		38.85		
MW-6	10/16/08		361.94	6654.70		38.06		
MW-6	05/12/09		360.49	6656.15		39.51		
MW-6	12/21/09		360.40	6656.24		39.60		
MW-7	07/29/04	7028.67	366.83	6661.84	435	68.17	355-435	*New well survey: MP(sounding tube)= top casing-0.05 ft*
MW-7	09/20/04		367.36	6661.31		67.64		
MW-7	12/07/04		368.20	6660.47		66.80		
MW-7	01/25/05		368.60	6660.07		66.40		
MW-7	03/10/05		369.08	6659.59		65.92		
MW-7	10/05/05		370.45	6658.22		64.55		
MW-7	11/09/06		372.88	6655.79		62.12		
MW-7	05/18/07		374.16	6654.51		60.84		
MW-7	02/20/08		375.91	6652.76		59.09		
MW-7	10/16/08		375.91	6652.76		59.09		
MW-7	05/12/09		377.93	6650.74		57.07		
MW-7	12/21/09		378.40	6650.27		56.60		
MW-8	08/09/04	7048.02	396.39	6651.63	450	53.61	370-450	*New well survey: MP(sounding tube)= top casing-0.15 ft*
MW-8	09/20/04		396.93	6651.09		53.07		
MW-8	12/07/04		396.98	6651.04		53.02		

TABLE 1
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PASEO DE VISTA LANDFILL
GROUNDWATER MONITOR WELLS

Monitor Well Number	Date	MP Elev. (ft)	Water Level (ft)	Water Table Elev. (ft)	Well Depth (ft)	Water Column (ft)	Screen Interval	Comments
MW-8	01/25/05		397.54	6650.48		52.46		
MW-8	03/11/05		398.15	6649.87		51.85		
MW-8	10/05/05		398.81	6649.21		51.19		
MW-8	11/09/06		401.06	6646.96		48.94		
MW-8	05/18/07		402.34	6645.68		47.66		
MW-8	02/20/08		402.93	6645.09		47.07		
MW-8	10/16/08		404.16	6643.86		45.84		
MW-8	05/12/09		404.33	6643.69		45.67		
MW-8	12/21/09		406.05	6641.97		43.95		
Ortiz MW-1	07/29/04	6999.03		6999.03	460		350-460	*New well survey: MP(sounding tube)= top casing-0.17 ft*
Ortiz MW-1	09/16/04		352.70	6646.33		107.30		
Ortiz MW-1	12/07/04		352.67	6646.36		107.33		
Ortiz MW-1	01/25/05		352.16	6646.87		107.84		
Ortiz MW-1	03/10/05		352.84	6646.19		107.16		
Ortiz MW-1	10/04/05		352.10	6646.93		107.90		
Ortiz MW-1	11/09/06		356.66	6642.37		103.34		
Ortiz MW-1	05/18/07		357.70	6641.33		102.30		
Ortiz MW-1	02/20/08		354.10	6644.93		105.90		
Ortiz MW-1	10/16/08		355.25	6643.78		104.75		
Ortiz MW-1	05/12/09		359.66	6639.37		100.34		
Ortiz MW-1	12/21/09		361.01	6638.02		98.99		
Alameda Exxon	05/25/04	6885.73	280.92	6604.81	----	----	----	Reported data from LUST site, Gwinn Hall, DBSA
Alameda Exxon	09/16/04		275.35	6610.38	----	----	----	
Alameda Exxon	01/31/05		265.58	6620.15	----	----	----	
Alameda Exxon	11/09/06		269.12	6616.61	----	----	----	
Alameda Exxon	08/28/08		251.55	6634.18	----	----	----	Reported data from LUST site, Gwinn Hall, DBSA
Alameda Exxon	05/29/09		252.02	6633.71	----	----	----	Reported data from LUST site, Gwinn Hall, DBSA
Alameda Exxon (s)	11/09/06		29.11	6858.37	----	----	----	Perched water completion

TABLE 2a
ORGANIC WATER QUALITY DATA, PASEO DE VISTA LANDFILL MONITOR WELLS 1-8
ORTIZ PARK MONITOR WELL 1 and Other Area Wells

	Volatile Organic Compounds																																								PNAH		EDB/DBCP		Polychlorinated Biphenyls						
Method	8260B																																								8310		504.1		8082						
Analytes	Acetone	Acrylontrile	Benzene	Bromochloromethane	Bromodichloromethane	Bromoform	Methyl bromide	2-Butanone	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Methyl chloride	Dibromochloromethane	Methylene bromide	o-Dichlorobenzene	p-Dichlorobenzene	trans-1,4-Dichloro-2-butene	1,1-Dichloroethane	1,2-Dichloroethane (EDC)	1,1-Dichloroethene	Methylene chloride (DCM)	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	2-Hexanone	Methyl iodide	4-Methyl-2-pentanone (MIBK)	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene (TCE)	Trichlorofluormethane	1,2,3-Trichloropropane	Vinyl Acetate	Vinyl Chloride	Xylenes (Total)	Napthalene + 1,2 Methylnapthalene	Benzo(a)pyrene	Ethylene dibromide (EDB)	1,2-Dibromo-3-chloropropane (DBCP)	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260
G.W.P.S			10							5	100		100				60	75		25	5	5	5	5			750				100		10	5	750	60	5	5				1	620	30	0.2	0.05	0.2	1	1	1	1	1	1	1
PQL	10	10	1	2	1	1	20	10	10	1	1	2	1	1	1	1	1	1	10	1	1	1	1	0.5	1	1	1	10	10	10	1	1	1	0.5	1	1	1	1	1	1	10	0.4	2	10	0.1	0.025	0.1	1	1	1	1	1	1	1
AML presumptive			5							3	50		50				30	38		13	3	3	3	2.5			375				50		5	2.5	375	30	3	3				0.5	310	15	0.1	0.025	0.1	1	1	1	1	1	1	1
MW-1 Ortiz Park																																																			
7/29/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.6	58	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
9/16/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	32	5	2	1	10	10	50	0.4	5	--	--	--	--	--	--	--	--	--	--	--
12/7/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	29	5	2	1	10	10	50	0.4	5	--	--	--	--	--	--	--	--	--	--	--
1/25/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	29	5	2	1	10	10	50	0.4	5	--	--	--	--	--	--	--	--	--	--	--
3/10/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	27	5	2	1	10	10	50	0.4	5	--	--	--	--	--	--	--	--	--	--	--
10/4/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	20	5	2	1	10	10	50	0.4	5	--	--	--	--	--	--	--	--	--	--	--
4/25/06	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	23	5	2	1	10	10	50	0.4	5	--	--	--	--	--	--	--	--	--	--	--
12/21/09			0.16	0.41	0.16	0.55				0.3	0.19		1.20	0.9	0.2	0.3	0.2	0.2		0.3	0.2	1.5		0.2	0.2	0.2	0.2				0.2	0.3	0.3	0.35	0.2			0.2	0.4	0.3		0.2	0.2	--	--	--	--	--	--	--	--	--	--
MW-1																																																			
3/22/01	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.8	220	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
4/19/01	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.7	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
6/14/01	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.6	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
2/1/02	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
8/5/03	100	200	2	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	1.7	5	5	2	1	10	10	50	0.4	5	--	--	--	--	--	--	--	--	--	--	--
1/6/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	1.5	5	5	2	1	10	10	50	0.4	5	--	--	--	--	--	--	--	--	--	--	--
MW-2																																																			
3/26/99	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
12/20/00	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
4/19/01	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
6/14/01	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
1/3/02	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
7/8/03	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
1/8/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
7/29/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
9/20/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
12/7/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
1/25/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
3/10/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
10/4/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
4/25/06	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
11/9/06	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
5/18/07	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
2/20/08	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
10/16/08	100	200	1		5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	5	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.01	0.1	--	--	--	--	--	--	--
5/12/09	10	10	1	2	1	1	2	10	10	1	1	2	1	1	1	1	1	1	10	1	1	1	1	0.5	1	1	1	10	10	10	1	1	1	0.5	1	1	1	1	1	1	10	0.4	2	--	--	0.01	0.1	--	--	--	--	--	--	--
12/21/09	10	10	1	2	1	1	2	10	10	1	1	2	1	1	1	1	1	1	10	1	1	1	1	0.5	1	1	1	10	10	10	1	1	1	0.5	1	1	1	1	1	1	10	0.4	2	--	--	0.01	0.1	--	--	--	--	--	--	--

Golder Associates

TABLE 2a
ORGANIC WATER QUALITY DATA, PASEO DE VISTA LANDFILL MONITOR WELLS 1-8
ORTIZ PARK MONITOR WELL 1 and Other Area Wells

	Volatile Organic Compounds																																									PNAH		EDB/DBCP		Polychlorinated Biphenyls						
Method	8260B																																									8310		504.1		8082						
Analytes	Acetone	Acrylontrile	Benzene	Bromochloromethane	Bromodichloromethane	Bromoform	Methyl bromide	2-Butanone	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Methyl chloride	Dibromochloromethane	Methylene bromide	o-Dichlorobenzene	p-Dichlorobenzene	trans-1,4-Dichloro-2-butene	1,1-Dichloroethane	1,2-Dichloroethane (EDC)	1,1-Dichloroethene	Methylene chloride (DCM)	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	2-Hexanone	Methyl iodide	4-Methyl-2-pentanone (MIBK)	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene (TCE)	Trichlorofluormethane	1,2,3-Trichloropropane	Vinyl Acetate	Vinyl Chloride	Xylenes (Total)	Napthalene + 1,2 Methylnapthalene	Benzo(a)pyrene	Ethylene dibromide (EDB)	1,2-Dibromo-3-chloropropane (DBCP)	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260
G.W.P.S			10							5	100		100				60	75		25	5	5	5	5			750				100		10	5	750	60	5	5				1	620	30	0.2	0.05	0.2	1	1	1	1	1	1	1
PQL	10	10	1	2	1	1	20	10	10	1	1	2	1	1	1	1	1	1	10	1	1	1	1	0.5	1	1	1	10	10	10	1	1	1	0.5	1	1	1	1	1	1	10	0.4	2	10	0.1	0.025	0.1	1	1	1	1	1	1	1
AML presumptive			5							3	50		50				30	38		13	3	3	3	2.5			375				50		5	2.5	375	30	3	3				0.5	310	15	0.1	0.025	0.1	1	1	1	1	1	1	1
MW-3																																																			
3/26/99	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
12/21/00	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
4/19/01	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
6/14/01	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
1/3/02	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
7/8/03	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
1/8/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
MW-4																																																			
3/26/99	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
2/19/01	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	71	5	2	1	10	10	50	0.4	5	10	0.1	0.030	0.1	1	1	1	1	1	1	1
4/19/01	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
6/14/01	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
1/4/02	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
7/8/03	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
1/6/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
MW-5																																																			
3/26/99	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
12/20/00	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
4/19/01	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
6/14/01	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
1/4/02	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
7/8/03	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
1/6/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
MW-6																																																			
7/29/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
9/20/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
12/7/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
1/25/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
3/10/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
10/5/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
4/25/06	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
11/9/06	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
5/18/07	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
2/20/08	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
10/16/08	100	200	1		5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	5	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.01	0.1	--	--	--	--	--	--	--
5/12/09	10	10	1	2	1	1	2	10	10	1	1	2	1	1	1	1	1	1	10	1	1	1	1	0.5	1	1	1	10	10	10	1	1	1	0.5	1	1	1	1	1	1	10	0.4	2	--	--	0.01	0.1	--	--	--	--	--	--	--
12/21/09	10	10	1	2	1	1	2	10	10	1	1	2	1	1	1	1	1	1	10	1	1	1	1	0.5	1	1	1	10	10	10	1	1	1	0.5	1	1	1	1	1	1	10	0.4	2	--	--	0.01	0.1	--	--	--	--	--	--	--

Golder Associates

TABLE 2a
ORGANIC WATER QUALITY DATA, PASEO DE VISTA LANDFILL MONITOR WELLS 1-8
ORTIZ PARK MONITOR WELL 1 and Other Area Wells

	Volatile Organic Compounds																																									PNAH		EDB/DBCP		Polychlorinated Biphenyls						
Method	8260B																																									8310		504.1		8082						
Analytes	Acetone	Acrylontrile	Benzene	Bromochloromethane	Bromodichloromethane	Bromoform	Methyl bromide	2-Butanone	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Methyl chloride	Dibromochloromethane	Methylene bromide	o-Dichlorobenzene	p-Dichlorobenzene	trans-1,4-Dichloro-2-butene	1,1-Dichloroethane	1,2-Dichloroethane (EDC)	1,1-Dichloroethene	Methylene chloride (DCM)	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	2-Hexanone	Methyl iodide	4-Methyl-2-pentanone (MIBK)	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene (TCE)	Trichlorofluormethane	1,2,3-Trichloropropane	Vinyl Acetate	Vinyl Chloride	Xylenes (Total)	Napthalene + 1,2 Methylnapthalene	Benzo(a)pyrene	Ethylene dibromide (EDB)	1,2-Dibromo-3-chloropropane (DBCP)	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260
G.W.P.S			10							5	100		100				60	75		25	5	5	5	5			750				100		10	5	750	60	5	5				1	620	30	0.2	0.05	0.2	1	1	1	1	1	1	1
PQL	10	10	1	2	1	1	20	10	10	1	1	2	1	1	1	1	1	1	10	1	1	1	1	0.5	1	1	1	10	10	10	1	1	1	0.5	1	1	1	1	1	1	10	0.4	2	10	0.1	0.025	0.1	1	1	1	1	1	1	1
AML presumptive			5							3	50		50				30	38		13	3	3	3	2.5			375				50		5	2.5	375	30	3	3				0.5	310	15	0.1	0.025	0.1	1	1	1	1	1	1	1
MW-7																																																			
7/29/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
9/20/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
12/7/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
1/25/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
3/10/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
10/5/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
4/25/06	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
11/9/06	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
5/18/07	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
2/20/08	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
10/16/08	100	200	1		5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	5	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.01	0.1	--	--	--	--	--	--	--
12/21/09	14	10	1	2	1	1	2	10	10	1	1	2	1	1	1	1	1	1	10	1	1	1	1	0.5	1	1	1	10	10	10	1	1	1	0.5	28	1	1	1	1	1	10	0.4	2	--	--	0.01	0.1	--	--	--	--	--	--	--
MW-8																																																			
7/29/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
9/20/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
12/7/04	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
1/25/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
3/11/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
10/5/05	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
4/25/06	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	10	0.1	0.025	0.1	1	1	1	1	1	1	1
11/9/06	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
5/18/07	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
2/20/08	100	200	1	2	5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	1	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.025	0.1	--	--	--	--	--	--	--
10/16/08	100	200	1		5	15	20	10	100	2	5	10	5	1	5	20	10	15	100	5	1	5	1	0.5	20	10	5	50	40	15	10	5	5	0.5	5	5	2	1	10	10	50	0.4	5	--	--	0.01	0.1	--	--	--	--	--	--	--
5/12/09	10	10	1	2	1	1	2	10	10	1	1	2	1	1	1	1	1	1	10	1	1	1	1	0.5	1	1	1	10	10	10	1	1	1	0.5	1	1	1	1	1	1	10	0.4	2	--	--	0.01	0.1	--	--	--	--	--	--	--
12/21/09	10	10	1	2	1	1	2	10	10	1	1	2	1	1	1	1	1	1	10	1	1	1	1	0.5	1	1	1	10	10	10	1	1	1	0.5	1	1	1	1	1	1	10	0.4	2	--	--	0.01	0.1	--	--	--	--	--	--	--

Golder Associates

TABLE 2a
ORGANIC WATER QUALITY DATA, PASEO DE VISTA LANDFILL MONITOR WELLS 1-8
ORTIZ PARK MONITOR WELL 1 and Other Area Wells

	Volatile Organic Compounds																																								PNAH		EDB/DBCP		Polychlorinated Biphenyls						
Method	8260B																																								8310		504.1								
Analytes	Acetone	Acrylontrile	Benzene	Bromochloromethane	Bromodichloromethane	Bromoform	Methyl bromide	2-Butanone	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Methyl chloride	Dibromochloromethane	Methylene bromide	o-Dichlorobenzene	p-Dichlorobenzene	trans-1,4-Dichloro-2-butene	1,1-Dichloroethane	1,2-Dichloroethane (EDC)	1,1-Dichloroethene	Methylene chloride (DCM)	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	2-Hexanone	Methyl iodide	4-Methyl-2-pentanone (MIBK)	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene (TCE)	Trichlorofluormethane	1,2,3-Trichloropropane	Vinyl Acetate	Vinyl Chloride	Xylenes (Total)	Napthalene + 1,2 Methylnapthalene	Benzo(a)pyrene	Ethylene dibromide (EDB)	1,2-Dibromo-3-chloropropane (DBCP)	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260
G.W.P.S			10							5	100		100				60	75		25	5	5	5	5			750				100		10	5	750	60	5	5				1	620	30	0.2	0.05	0.2	1	1	1	1	1	1	1
PQL	10	10	1	2	1	1	20	10	10	1	1	2	1	1	1	1	1	1	10	1	1	1	1	0.5	1	1	1	10	10	10	1	1	1	0.5	1	1	1	1	1	10	0.4	2	10	0.1	0.025	0.1	1	1	1	1	1	1	1
AML presumptive			5							3	50		50				30	38		13	3	3	3	2.5			375				50		5	2.5	375	30	3	3				0.5	310	15	0.1	0.025	0.1	1	1	1	1	1	1	1
131 Lugar De Oro Residential Well																																																			
7/9/03			0.1							0.1							0.1	0.1			0.1			0.1			0.1				0.1				0.1	0.1		0.1				0.2	0.1									
10/30/09			0.03	0.04	0.03	0.1				0.05	0.05		0.7		0.07		0.11	0.11		0.07	0.04	0.04		0.05	0.04	0.06	0.12				0.1	0.07	0.11	0.05	0.04	0.05	0.06	0.03	0.05	0.10		0.09	0.07			0.05							
1113 North Luna Circle																																																			
10/30/09			0.03	0.04	0.03	0.1				0.05	0.05		0.19		0.07		0.11	0.11		0.07	0.04	0.04		0.05	0.04	0.06	0.12				0.1	0.07	0.11	0.05	0.04	0.05	0.06	0.03	0.05	0.10		0.09	0.07			0.05							
12/21/09			0.16	0.41	0.16	0.55				0.3	0.19		0.24	0.9	0.2	0.3	0.2	0.2		0.3	0.2	1.5		0.2	0.2	0.2	0.2				0.2	0.3	0.3	0.35	0.2			0.2	0.4	0.3		0.2	0.2										
400 Graham Residential Well																																																			
7/11/03			0.1							0.1							0.1	0.1			0.1			0.1			0.1				0.1				0.1	0.1		0.1				0.2	0.1										
10/30/09			0.03	0.04	0.03	0.1				0.05	0.05		0.2		0.07		0.11	0.11		0.07	0.04	0.04		0.05	0.04	0.06	0.12				0.1	0.07	0.11	0.05	0.04	0.05	0.06	0.03	0.05	0.10		0.09	0.07			0.05							
12/21/09			0.16	0.41	0.16	0.55				0.3	0.19		0.2	0.9	0.2	0.3	0.2	0.2		0.3	0.2	1.5		0.2	0.2	0.2	0.2				0.2	0.3	0.3	0.35	0.2			0.2	0.4	0.3		0.2	0.2	0.37		0.21	0.47						
Alameda Exxon (1Deep)																																																			
12/21/09			0.16	0.41	0.2	0.55				0.3	0.19		1.5	0.9	0.2	0.3	0.2	0.2		0.3	0.2	1.5		0.2	0.2	0.2	0.2				0.2	0.3	0.3	1.1	0.2			0.2	0.4	0.3		0.2	0.2										

Golder Associates

TABLE 2b
INORGANIC, PHENOLICS AND TOTAL ORGANIC CARBON WATER PARAMETERS
PASEO DE VISTA LANDFILL MONITOR WELLS 1-8, ORTIZ PARK MONITOR WELL NO. 1
AND OTHER AREA WELLS

	Inorganics																																							TOC	Total Phenolics	Radium	
Method	310.1		300.0				351	calc	160	120	150	6010c																				6020				335	7470a	A5310C	420.3	903.0, 904.0	
Analytes	HCO3	CO_3	Chloride	Flouride	Sulfate	Nitrate	Total Kjeldahl Nitrogen	Total Nitrogen	Total Dissolved Solids	Conductivity	pH	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Silver	Sodium	Uranium	Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Cyanide	Mercury	Total Organic Carbon	Total Phenolics	Radium 226	Radium 228
G.W.P.S.			250	1.6	250	10		10	500	0.01	0.1	5	1	0.004	0.8	0.005		0.05	0.05	1.00	0.3	0.05		0.05	1	0.1		0.05		5		5	0.006	0.05	0.01	0.002	0.2	0.002		0.005	5	5
PQL	20		2	0.4	2.5	1		1	5			3	0.02	0.002	0.5	0.002		0.01	0.03	0.05	0.1	0.01		0.03	0.75	0.05		0.01		2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
AML presumptive			187.5	1.2	187.5	5.0		5.0	375			2.5	0.75	0.002	0.4	0.0025		0.025	0.025	0.5	0.225	0.025		0.0375	0.5	0.05		0.025		2.5		2.5	0.003	0.025	0.005	0.001	0.1	0.001		0.0025	2.5	2.5
MW-1 Ortiz Park (background)	160	4	21	0.2	13	3.7	1	5.41	260	350	8	3	0.547	0.002	0.5	0.002	51	0.0068	0.03	0.05	0.06	0.0066	5.5	0.0307	0.75	0.05	1.1	0.006	24	2.5	0.08	0.05	0.003	0.021	0.028	0.001	0.1	0.0003	0.5	0.003	2.5	2.5
7/29/04	160	4	21	0.2	13	3.7	1	3.7	260	350	8.0	3	0.38	0.002	0.5	0.002	51	0.01	0.03	0.05	**0.26**	0.01	5.5	0.34	0.75	0.05	1.1	0.01	24	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
12/7/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/25/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	--	--	0.068	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/10/05	--	--	--	--	--	--	--	--	--	--	--	--	0.57	--	--	0.002	--	0.006	--	--	--	0.005	--	--	--	--	--	0.005	--	--	--	--	--	0.05	0.05	--	--	0.0002	--	--	--	--
3/10/05	--	--	--	--	--	--	--	--	--	--	--	--	0.58	--	--	--	--	--	--	--	0.1	0.01	--	0.054	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/4/05	--	--	--	--	--	--	--	--	--	--	--	--	0.61	--	--	0.002	--	0.006	--	--	--	0.005	--	--	--	--	--	0.005	--	--	--	--	--	0.02	0.05	--	--	0.0002	--	--	--	--
10/4/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/25/06	--	--	--	--	--	--	--	--	--	--	--	--	0.64	--	--	0.002	--	0.006	--	--	--	0.005	--	--	--	--	--	0.005	--	--	--	--	--	0.02	0.05	--	--	0.0002	--	--	--	--
4/25/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/21/09	--	--	--	--	--	--	--	7.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1 (background)	96	4	36.38	0.4	10.2	10.7	1	10.7	279.3	420.6	7.59	3	0.739	0.002	0.5	0.002	68.9	0.01	0.03	0.08	2.01	0.0428	13.3	0.2661	0.75	0.05	1.55	0.01	7.763	2.5	0.08	0.709	0.003	0.01	0.007	0.001	0.1	0.001	1.38	0.003	2.5	2.5
3/22/01	118	4	37	0.4	9.8	11	1	11	286	436	7.68	3	0.66	0.002	0.5	0.002	60	0.01	0.03	0.06	0.52	0.010	13	0.07	0.75	0.05	1.6	0.01	9.5	2.5	0.08	0.86	0.003	0.01	0.007	0.001	0.1	0.001	2	0.003	2.5	2.5
4/19/01	59	4	32	0.5	10	11	1	11	280	400	7.78	3	0.69	0.002	0.5	0.002	60	0.01	0.03	0.06	0.46	0.010	12	0.09	0.75	0.05	2	0.01	7	2.5	0.08	0.35	0.003	0.01	0.007	0.001	0.1	0.001	1	0.003	2.5	2.5
6/14/01	110	4	37	0.4	9.9	11	1	11	290	460	7.5	3	**0.76**	0.002	0.5	0.002	66	0.01	0.03	0.06	4.0	**0.030**	13	0.18	0.75	0.05	1	0.01	7	2.5	0.08	0.46	0.003	0.01	0.005	0.001	0.1	0.001	1.4	0.003	2.5	2.5
2/1/02	111	4	40	0.4	11.3	**9.8**	1	9.8	262	390	7.4	3	**0.86**	0.002	0.5	0.002	94.6	0.01	0.03	0.16	6.65	0.100	15.3	0.49	0.75	0.05	1.8	0.01	7.8	2.5	0.08	1.82	0.003	0.01	0.007	0.001	0.1	0.001	1.3	0.003	2.5	2.5
8/5/03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.860	--	--	--	--	--	--	--	--	--	--	--	--	0.012	--	--	--	--	--	--	--
1/6/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.1	0.011	--	2.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2 (background)	97.7	3.2	18.2	0.4	16.0	3.6	1.0	3.8	187.0	287.8	7.8	3.0	0.23	0.002	0.5	0.002	43	0.01	0.03	0.07	0.09	0.01	6.47	0.016	0.75	0.05	1.83	0.01	5.8	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.79	0.003	2.5	2.5
3/26/99	98	4	17	0.4	15	3.5	1.1	4.6	187	293	--	3	0.234	0.002	0.5	0.002	42	0.01	0.03	0.07	0.1	0.010	6	0.03	0.75	0.05	2.0	0.01	6.0	2.5	0.08	0.06	0.003	0.01	0.005	0.001	0.1	0.001	2	0.003	2.5	2.5
12/20/00	99	4	15	0.4	14	3.6	1	3.6	191	298	7.88	3	0.23	0.002	0.5	0.002	47.1	0.01	0.03	0.06	0.1	0.010	7.1	0.03	0.75	0.05	2.3	0.01	7.5	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	2	0.003	2.5	2.5
4/19/01	100	4	16	0.4	15	3.6	1	3.6	130	270	8.03	3	0.23	0.002	0.5	0.002	43	0.01	0.03	0.06	0.1	0.010	6	0.03	0.75	0.05	2.0	0.01	6.0	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.7	0.003	2.5	2.5
6/14/01	96	4	16	0.4	14	3.4	1	3.4	180	310	7.5	3	0.25	0.002	0.5	0.002	45	0.01	0.03	0.06	0.1	0.010	7	0.03	0.75	0.05	2.0	0.01	6.0	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
1/3/02	110	4	17	0.4	16.6	3.4	1.4	4.8	160	260	7.34	3	0.22	0.002	0.5	0.002	47.6	0.01	0.03	0.06	0.1	0.010	7.2	0.03	0.75	0.05	1.8	0.01	5.4	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.7	0.003	2.5	2.5
7/8/03	100	4	18	0.4	16	3.5	1	3.5	180	290	8	3	0.25	0.002	0.5	0.002	46	0.01	0.03	0.09	0.82	0.010	7	**0.042**	0.75	0.05	2.0	0.01	6.2	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
1/8/04	100	4	20	0.3	17	3.5	1	3.5	180	270	7.9	3	0.21	0.002	0.5	0.002	41	0.01	0.03	0.08	0.17	0.010	5.9	0.03	0.75	0.05	1.7	0.01	5.4	2.5	0.08	0.05	0.003	0.01	0.01	0.001	0.1	0.001	0.64	0.003	2.5	2.5
7/29/04	96	4	18	0.4	17	3.5	1	3.5	200	280	7.9	3	0.23	0.002	0.5	0.002	42	0.01	0.03	0.06	0.13	0.010	6.5	0.03	0.75	0.05	1.7	0.01	5.4	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
9/20/04	100	4	18	0.4	16	3.6	1	--	200	--	--	3	--	--	--	--	40	--	--	--	0.16	--	6.3	0.03	--	--	1.6	--	5.4	--	--	--	--	--	--	--	--	--	0.5	--	--	--
12/7/04	100	4	17	--	16	4.2	1	--	180	220	7.6	3	--	--	--	--	42	--	--	--	0.1	--	6.5	0.03	--	--	1.7	--	5.4	--	--	--	--	--	--	--	--	--	0.5	--	--	--
1/25/05	100	4	18	--	16	3.4	--	--	190	--	--	--	--	--	--	--	36	--	--	--	0.1	--	5.2	0.03	--	--	1.5	--	4.9	--	--	--	--	--	--	--	--	--	0.5	--	--	--
3/10/05	98	4	19	--	15	3.5	--	--	--	--	--	--	--	--	--	--	44	--	--	--	0.1	--	6.6	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/5/05	97	2	19	--	17	3.7	1	--	210	--	--	--	--	--	--	--	46	--	--	--	0.1	--	6.7	0.03	--	--	1.8	--	5.8	--	--	--	--	--	--	--	--	--	0.5	--	--	--
4/25/06	95	2	19	--	16	3.5	1	--	200	--	--	--	--	--	--	--	43	--	--	--	0.12	--	6.2	0.03	--	--	1.8	--	5.6	--	--	--	--	--	--	--	--	--	0.5	--	--	--
11/9/06	95	2	20	--	17	3.6			200	320	7.9	--	--	--	--	--	45	--	--	--	0.1	--	6.9	0.03	--	--	2.1	--	7.2	--	--	--	--	--	--	--	--	--	1.0	--	--	--
11/9/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/18/07	94	2	20	--	17	3.7	--	--	200	310	7.75	--	--	--	--	--	--	--	--	--	0.1	--	6.2	0.03	--	--	1.6	--	5.3	--	--	--	--	--	--	--	--	--	1.0	--	--	--
5/18/07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/20/08	87	2	21	--	17	3.8	--	--	210	320	7.84	--	--	--	--	--	46	--	--	--	0.2	--	7	0.03	--	--	1.9	--	5.9	--	--	--	--	--	--	--	--	--	1.0	--	--	--
2/20/08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/16/08	95	2	22	--	17	3.8	--	--	200	320	7.64	--	--	--	--	--	43	--	--	--	0.05	--	6.6	0.002	--	--	1.8	--	5.7	--	--	--	--	--	--	--	--	--	1.0	--	--	--
10/16/08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/12/09	94	2	23	--	17	3.6	--	--	200	330	7.91	--	--	--	--	--	48	--	--	--	0.1	--	7.4	0.01	--	--	2.1	--	6.5	--	--	--	--	--	--	--	--	--	1.0	--	--	--
5/12/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/21/09	95	2	29	--	17	3.8	--	--	213	310	7.88	--	--	--	--	--	45.2	--	--	--	0.06	--	6.5	0.01	--	--	1.9	--	5.3	--	--	--	--	--	--	--	--	--	1.0	--	--	--
12/21/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Golder Associates

TABLE 2b
INORGANIC, PHENOLICS AND TOTAL ORGANIC CARBON WATER PARAMETERS
PASEO DE VISTA LANDFILL MONITOR WELLS 1-8, ORTIZ PARK MONITOR WELL NO. 1
AND OTHER AREA WELLS

	Inorganics																																							TOC	Total Phenolics	Radium	
Method	310.1		300.0				351	calc	160	120	150	6010c																				6020				335	7470a	A5310C	420.3	903.0, 904.0	
Analytes	HCO3	CO_3	Chloride	Flouride	Sulfate	Nitrate	Total Kjeldahl Nitrogen	Total Nitrogen	Total Dissolved Solids	Conductivity	pH	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Silver	Sodium	Uranium	Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Cyanide	Mercury	Total Organic Carbon	Total Phenolics	Radium 226	Radium 228
G.W.P.S.			250	1.6	250	10		10	500	0.01	0.1	5	1	0.004	0.8	0.005		0.05	0.05	1.00	0.3	0.05		0.05	1	0.1		0.05		5		5	0.006	0.05	0.01	0.002	0.2	0.002		0.005	5	5
PQL	20		2	0.4	2.5	1		1	5			3	0.02	0.002	0.5	0.002		0.01	0.03	0.05	0.1	0.01		0.03	0.75	0.05		0.01		2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
AML presumptive			187.5	1.2	187.5	5.0		5.0	375			2.5	0.75	0.002	0.4	0.0025		0.025	0.025	0.5	0.225	0.025		0.0375	0.5	0.05		0.025		2.5		2.5	0.003	0.025	0.005	0.001	0.1	0.001		0.0025	2.5	2.5
MW-3 (background)	87.2	4.0	8.9	0.4	7.0	2.6	1.0	2.9	160.7	220.0	7.9	3	0.35	0.002	0.5	0.002	36	0.01	0.03	0.06	0.11	0.01	5.43	0.03	0.75	0.05	1.59	0.01	5.24	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.10	0.001	1.22	0.003	2.5	2.5
3/26/99	92	4	9.0	0.4	6.8	2.7	1.1	3.8	152	235	NM	3	0.379	0.002	0.5	0.002	34	0.01	0.03	0.06	0.1	0.010	5	0.03	0.75	0.05	1	0.01	5.0	2.5	0.08	0.05	0.003	0.01	0.005	0.001	NM	0.001	2	0.003	2.5	2.5
12/21/00	93	4	8.2	1	6.6	2.6	1	2.6	153	240	8.0	3	0.34	0.002	0.5	0.002	36.7	0.01	0.03	0.06	0.1	0.010	5.7	0.03	0.75	0.05	2	0.01	6.8	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	2	0.003	2.5	2.5
4/19/01	46	4	8.2	0.4	6.7	2.8	1	2.8	130	190	8.0	3	0.35	0.002	0.5	0.002	34	0.01	0.03	0.06	0.1	0.010	5	0.03	0.75	0.05	2	0.01	5.0	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.7	0.003	2.5	2.5
6/14/01	92	4	8.5	0.4	6.9	2.6	1	2.6	150	230	7.8	3	0.36	0.002	0.5	0.002	39	0.01	0.03	0.06	0.1	0.010	6	0.03	0.75	0.05	2	0.01	5.0	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
1/3/02	110	4	8.7	0.4	7.6	2.6	1.1	3.7	150	200	7.4	3	0.34	0.002	0.5	0.002	38.3	0.01	0.03	0.06	0.1	0.010	5.9	0.03	0.75	0.05	1.5	0.01	4.6	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	1.4	0.003	2.5	2.5
7/8/03	100	4	9.7	0.4	7	2.6	1	2.6	140	230	8.0	3	0.37	0.002	0.5	0.002	37	0.01	0.03	0.06	0.1	0.010	5.5	0.03	0.75	0.05	1.5	0.01	5.3	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
1/8/04	96	4	9.9	0.3	7.1	2.6	1	2.6	290	220	8.0	3	0.34	0.002	0.5	0.002	34	0.01	0.03	0.06	0.15	0.010	5.0	0.03	0.75	0.05	1.4	0.01	5.2	2.5	0.08	0.06	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
MW-4 (background)	76.3	4.2	12.8	0.4	6.1	7.7	0.9	7.8	188.9	259.1	7.8	3	0.56	0.002	0.5	0.002	49	0.01	0.03	0.06	1.03	0.02	7.82	0.126	0.75	0.05	1.99	0.01	5.92	2.5	0.08	0.84	0.003	0.01	0.005	0.001	0.10	0.001	1.00	0.003	2.5	2.5
3/26/99	78	6	13	0.4	6.3	**7.8**	0.5	7.8	167	268	NM	3	0.506	0.002	0.5	0.002	38	0.01	0.03	0.06	0.4	0.060	7	0.07	0.75	0.05	2	0.01	6	2.5	0.08	2.31	0.003	0.01	0.005	0.001	NM	0.001	2	0.003	2.5	2.5
2/19/01	84	4	12	0.4	6	**8.3**	1	8.3	177	277	7.96	3	0.49	0.002	0.5	0.002	43.7	0.01	0.03	0.06	0.33	0.010	7.4	0.06	0.75	0.05	1.9	0.01	6.5	2.5	0.08	0.3	0.003	0.01	0.005	0.001	0.1	0.001	2	0.003	2.5	2.5
4/19/01	42	4	12	0.4	6.3	**8.4**	1	8.4	180	250	7.9	3	0.44	0.002	0.5	0.002	41	0.01	0.03	0.06	0.33	0.010	7	0.05	0.75	0.05	2	0.01	6	2.5	0.08	0.43	0.003	0.01	0.005	0.001	0.1	0.001	0.3	0.003	2.5	2.5
6/14/01	84	4	12	0.4	6.5	**8.1**	1	8.1	210	280	7.6	3	0.44	0.002	0.5	0.002	41	0.01	0.03	0.06	0.6	0.010	7	0.03	0.75	0.05	1	0.01	6	2.5	0.08	0.33	0.003	0.01	0.005	0.001	0.1	0.001	2	0.003	2.5	2.5
1/4/02	91	4	13	0.4	6.8	**7.9**	1	7.9	182	252	7.3	3	0.45	0.002	0.5	0.002	45.3	0.01	0.03	0.06	0.54	0.010	7.3	0.08	0.75	0.05	1.7	0.01	5.3	2.5	0.08	0.58	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
7/8/03	85	4	14	0.4	5.6	**6.8**	1	6.8	160	260	8	3	**1.2**	0.002	0.5	0.002	92	0.039	0.03	0.06	29	**0.049**	13	1	0.75	0.05	4.8	0.01	6.2	2.5	0.08	2.3	0.003	0.01	0.005	0.001	0.1	0.001	0.84	0.003	2.5	2.5
1/6/04	84	4	14	0.2	5.6	**7.3**	1	7.3	290	230	8.1	3	0.65	0.002	0.5	0.002	61	0.01	0.03	0.06	3.1	0.015	7.4	1	0.75	0.05	2.0	0.01	5.5	2.5	0.08	2.3	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
9/16/04	--	--	--	--	--	**7.6**	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/25/05	--	--	--	--	--	**7.4**	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/10/05	--	--	--	--	--	**7.6**	1	7.6	200	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/5/05	--	--	--	--	--	**7.9**	1	7.9	180	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/25/06	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/25/06	--	--	--	--	--	**7.3**	1	--	170	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5 (background)	79.5	3.3	9.7	0.4	5.0	2.7	1.0	3.0	115.2	222.6	8.1	3.8	0.6	0.002	0.5	0.002	49	0.01	0.03	0.06	1.93	0.022	3.5	0.07	0.75	0.05	1.3	0.01	4.8	2.5	0.08	1.0	0.003	0.01	0.005	0.001	0.1	0.001	0.95	0.03	2.5	2.5
3/26/99	106	2	8.4	0.4	5	3.4	0.5	3.4	158	252	NM	3	0.618	0.002	0.5	0.002	44	0.01	0.03	0.06	0.73	0.110	3	**0.04**	0.75	0.05	1.0	0.01	5	2.5	0.08	2.18	0.003	0.01	0.005	0.001	NM	0.001	2	0.003	2.5	2.5
12/20/00	120	2	8.8	1	5	3.1	1.1	4.2	169	261	7.8	3	0.64	0.002	0.5	0.002	54.2	0.01	0.03	0.06	0.83	0.020	3.4	0.07	0.75	0.05	1.3	0.01	6.9	2.5	0.08	0.94	0.003	0.01	0.005	0.001	0.1	0.001	2	0.003	2.5	2.5
4/19/01	50	2	9	0.4	5	3.3	1	3.3	160	240	8.0	3	0.62	0.002	0.5	0.002	46	0.01	0.03	0.06	0.83	0.010	3	0.03	0.75	0.05	1.0	0.01	5	2.5	0.08	0.81	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
6/14/01	110	2	9.3	0.4	5	3.1	1	3.1	171	270	8.0	3	0.6	0.002	0.5	0.002	66	0.01	0.03	0.06	1.3	0.020	3	0.03	0.75	0.05	1.0	0.01	4	2.5	0.08	0.65	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
1/4/02	24	16	9.8	0.4	5.1	1	1.7	1.7	8.2	106	9.0	3	0.33	0.002	0.5	0.002	22.2	0.01	0.03	0.06	0.47	0.020	2.6	0.03	0.75	0.05	1.0	0.01	3.9	2.5	0.08	5.85	0.003	0.01	0.005	0.001	0.1	0.001	0.7	0.003	2.5	2.5
7/8/03	100	4	12	0.4	5	3	1	3	150	250	7.9	3	**0.89**	0.002	0.5	0.002	68	0.036	0.03	0.06	17	0.016	5.2	0.36	0.75	0.05	2.3	0.01	4.8	2.5	0.08	0.27	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
1/6/04	120	4	11	0.14	4.6	3	1	3	300	240	7.8	15	**0.80**	0.002	0.5	0.002	65	**0.04**	0.03	0.06	19	0.019	5.3	0.37	0.75	0.05	2.3	0.01	4.6	2.5	0.08	0.57	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5

Golder Associates

TABLE 2b
INORGANIC, PHENOLICS AND TOTAL ORGANIC CARBON WATER PARAMETERS
PASEO DE VISTA LANDFILL MONITOR WELLS 1-8, ORTIZ PARK MONITOR WELL NO. 1
AND OTHER AREA WELLS

	Inorganics																																							TOC	Total Phenolics	Radium	
Method	310.1		300.0				351	calc	160	120	150	6010c																				6020				335	7470a	A5310C	420.3	903.0, 904.0	
Analytes	HCO3	CO_3	Chloride	Flouride	Sulfate	Nitrate	Total Kjeldahl Nitrogen	Total Nitrogen	Total Dissolved Solids	Conductivity	pH	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Silver	Sodium	Uranium	Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Cyanide	Mercury	Total Organic Carbon	Total Phenolics	Radium 226	Radium 228
G.W.P.S.			250	1.6	250	10		10	500	0.01	0.1	5	1	0.004	0.8	0.005		0.05	0.05	1.00	0.3	0.05		0.05	1	0.1		0.05		5		5	0.006	0.05	0.01	0.002	0.2	0.002		0.005	5	5
PQL	20		2	0.4	2.5	1		1	5			3	0.02	0.002	0.5	0.002		0.01	0.03	0.05	0.1	0.01		0.03	0.75	0.05		0.01		2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
AML presumptive			187.5	1.2	187.5	5.0		5.0	375			2.5	0.75	0.002	0.4	0.0025		0.025	0.025	0.5	0.225	0.025		0.0375	0.5	0.05		0.025		2.5		2.5	0.003	0.025	0.005	0.001	0.1	0.001		0.0025	2.5	2.5
MW-6 (background)	114	3	7.3	0.4	4.1	4.2	1	4.2	172	256	8	2	0.40	0.003	0.38	0.002	61	0.01	0.03	0.06	0.16	0.01	6.5	0.025	0.87	0.05	1.8	0.01	5.3	2.5	0.08	0.05	0.003	0.01	0.01	0.00	0.1	0.001	0.67	0.003	2.5	2.5
7/29/04	180	4	7.2	0.4	4.3	4.1	1	4.1	180	240	8	3	0.61	0.002	0.5	0.002	80	0.01	0.03	0.06	0.69	0.01	6.2	0.32	0.75	0.05	1.5	0.01	5	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
9/20/04	120	4	7.3	0.4	4.3	4.1	1	4.2	160	250	8.2	15	0.91	0.002	0.5	0.002	120	0.027	0.03	0.06	13	0.01	11	0.64	0.75	0.05	4.4	0.01	6.7	2.5	0.08	0.06	0.003	0.01	0.005	0.001	0.1	0.001	0.8	0.003	2.5	2.5
12/7/04	120	4	7.0	0.4	3.9	4.2	1	4.1	180	240	8	10	0.88	0.002	0.5	0.002	140	0.017	0.03	0.06	0.69	0.012	8.9	0.72	0.75	0.05	3.3	0.01	5.2	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
1/25/05	110	4	7.0	0.4	3.8	4.1	1	4.1	170	240	8.1	4.2	0.02	0.002	0.5	0.002	51	0.01	0.03	0.06	1.4	0.01	5.8	0.16	0.75	0.05	1.9	0.01	4.5	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
3/10/05	100	8	7.4	0.4	4.0	4.2	1	4.2	170	280	8.5	3	0.5	0.002	0.5	0.002	48	0.01	0.03	0.06	0.31	0.01	6.1	0.035	0.75	0.05	1.3	0.01	5.1	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
3/10/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/5/05	110	2	7.4	0.4	4.1	4.3	1	4.3	190	260	8.1	3	0.5	0.002	0.5	0.002	48	0.01	0.03	0.05	0.49	0.01	6.1	0.051	0.75	0.05	1.8	0.01	5.2	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
10/5/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/25/06	120	2	6.9	0.4	4.0	4.0	1	4.7	190	260	7.94	3	0.53	0.002	0.5	0.002	49	0.01	0.03	0.05	0.23	0.01	5.4	0.071	0.75	0.05	1.4	0.01	5.0	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
4/25/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/9/06	100	2	7.5	0.4	4.0	4.2	1	4.2	160	260	7.9	0.002	0.49	0.03	0.1	0.002	46	0.01	0.03	0.06	0.14	0.01	6.0	0.03	2.5	0.08	1.4	0.01	6.0	2.5	0.08	0.05	--	--	--	--	--	--	1.0	--	--	--
11/9/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/18/07	100	--	7.4	--	4.0	4.2	--	--	170	260	7.55	--	--	--	--	--	--	--	--	--	0.12	--	5.7	0.053	--	--	1.3	--	5.3	--	--	--	--	--	--	--	--	--	1.0	--	--	--
5/18/07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/20/08	110	2	7.6	--	4.1	4.2	--	--	180	270	7.93	--	--	--	--	--	54	--	--	--	1.9	--	6.5	0.11	--	--	1.9	--	5.2	--	--	--	--	--	--	--	--	--	1.0	--	--	--
2/20/08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	--	--	0.0052	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/16/08	100	2	7.6	--	4.1	4.3	--	--	150	260	7.7	--	--	--	--	--	37	--	--	--	0.05	--	5.5	0.007	--	--	1.3	--	4.9	--	--	--	--	--	--	--	--	--	1.0	--	--	--
10/16/08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/12/09	100	2	7.5	--	4.2	4.0	--	--	160	270	8.02	--	--	--	--	--	40	--	--	--	0.1	--	5.9	0.01	--	--	1.6	--	5.0	--	--	--	--	--	--	--	--	--	1	--	--	--
5/12/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	--	--	0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/21/09	110	2	7.3	--	4.6	4.2	--	--	175	250	7.91	--	--	--	--	--	52	--	--	--	**0.27**	--	6.5	**0.09**	--	--	1.9	--	5.3	--	--	--	--	--	--	--	--	--	1	--	--	--
12/21/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7 (background)	97	2.8	9.4	0.4	4.1	5.8	1	5.7	166	239	8.1	3	0.44	0.003	0.4	0.002	46	0.01	0.03	0.06	0.18	0.01	7.0	0.04	0.87	0.05	0.9	0.01	5.4	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.69	0.003	2.5	2.5
7/29/04	170	4	9	0.4	4.9	**5.4**	1	5.4	180	230	8.1	3	0.44	0.002	0.5	0.002	61	0.01	0.03	0.06	0.92	0.01	6.7	0.32	0.75	0.05	1.7	0.01	9.2	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
9/20/04	92	4	10	0.4	3.8	**5.6**	1	5.6	150	230	8.2	3	0.4	0.002	0.5	0.002	39	0.01	0.03	0.06	1.7	0.01	7.3	0.13	0.75	0.05	1.7	0.01	6.7	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
12/7/04	96	4	9.6	0.4	4.2	**5.5**	1	5.5	180	230	8.1	3	0.38	0.002	0.5	0.002	42	0.01	0.03	0.06	0.78	0.01	6.4	0.13	0.75	0.05	1.4	0.01	5.0	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
1/25/05	92	4	9.6	0.4	4.0	**5.5**	1	5.5	160	220	8.0	3	0.44	0.002	0.5	0.002	34	0.01	0.03	0.06	1.4	0.01	6.5	0.089	0.75	0.05	1.9	0.01	5.1	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
3/10/05	130	4	10	0.4	4.1	**5.7**	1	5.7	170	250	8.2	3	0.4	0.002	0.5	0.002	41	0.01	0.03	0.06	1.1	0.01	7.6	0.073	0.75	0.05	1.5	0.01	5.5	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
3/10/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.035	--	--	0.014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/5/05	83	2	9.9	0.4	4.1	**5.9**	1	5.9	180	250	8.2	3	0.39	0.002	0.5	0.002	40	0.01	0.03	0.05	**0.24**	0.01	6.9	0.064	0.75	0.05	1.1	0.01	5.0	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
10/5/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.0043	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/25/06	98	2	9.1	0.4	4.2	**5.6**	1	5.9	190	240	8.03	3	**0.82**	0.002	0.5	0.002	170	0.019	**0.034**	0.05	11	0.01	10	0.970	0.75	0.05	3.1	0.01	4.9	2.5	0.08	0.08	0.003	0.01	0.005	0.001	0.1	0.001	1.1	0.003	2.5	2.5
4/25/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.32	--	--	0.0540	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/9/06	79	2	8.5	0.4	3.9	**6.0**	--	6.0	150	240	8.0	2	0.36	0.03	0.1	0.002	34	0.01	0.03	0.06	0.11	0.01	6.3	1.0	2.5	0.08	0.05	0.01	4.2	2.5	0.08	0.05	--	--	--	--	--	--	1.0	--	--	--
11/9/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/18/07	82	--	9.0	--	4.1	**6.3**	--	--	160	240	7.85	--	--	--	--	--	--	--	--	--	.12	--	6.6	**0.045**	--	--	1.0	--	5.0	--	--	--	--	--	--	--	--	--	1.0	--	--	--
5/18/07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/20/08	81	2	9.0	--	4.1	**6.4**	--	--	160	250	8.04	--	--	--	--	--	35	--	--	--	0.13	--	6.8	0.030	--	--	0.1	--	4.9	--	--	--	--	--	--	--	--	--	1.0	--	--	--
2/20/08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/16/08	80	2	9.8	--	4.2	**6.7**	--	--	150	250	7.79	--	--	--	--	--	37	--	--	--	0.11	--	6.5	0.071	--	--	1.1	--	4.7	--	--	--	--	--	--	--	--	--	1.0	--	--	--
10/16/08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/21/09	1000	2	9.6	--	8.8	**6.4**	--	--	360	250	8.0	--	--	--	--	--	95.4	--	--	--	**101**	--	45.2	**8.89**	--	--	15.9	--	7.5	--	--	--	--	--	--	--	--	--	1.0	--	--	--
12/21/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.16	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Golder Associates

TABLE 2b
INORGANIC, PHENOLICS AND TOTAL ORGANIC CARBON WATER PARAMETERS
PASEO DE VISTA LANDFILL MONITOR WELLS 1-8, ORTIZ PARK MONITOR WELL NO. 1
AND OTHER AREA WELLS

	Inorganics																																							TOC	Total Phenolics	Radium	
Method	310.1		300.0				351	calc	160	120	150	6010c																				6020				335	7470a	A5310C	420.3	903.0, 904.0	
Analytes	HCO3	CO_3	Chloride	Flouride	Sulfate	Nitrate	Total Kjeldahl Nitrogen	Total Nitrogen	Total Dissolved Solids	Conductivity	pH	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Silver	Sodium	Uranium	Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Cyanide	Mercury	Total Organic Carbon	Total Phenolics	Radium 226	Radium 228
G.W.P.S.			250	1.6	250	10		10	500	0.01	0.1	5	1	0.004	0.8	0.005		0.05	0.05	1.00	0.3	0.05		0.05	1	0.1		0.05		5		5	0.006	0.05	0.01	0.002	0.2	0.002		0.005	5	5
PQL	20		2	0.4	2.5	1		1	5			3	0.02	0.002	0.5	0.002		0.01	0.03	0.05	0.1	0.01		0.03	0.75	0.05		0.01		2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
AML presumptive			187.5	1.2	187.5	5.0		5.0	375			2.5	0.75	0.002	0.4	0.0025		0.025	0.025	0.5	0.225	0.025		0.0375	0.5	0.05		0.025		2.5		2.5	0.003	0.025	0.005	0.001	0.1	0.001		0.0025	2.5	2.5
MW-8 (background)	90.8	2.4	12.7	0.4	5.4	9.19	1	9.16	200	292	8.02	3.032	0.303	0.003	0.4	0.002	47.3	0.01	0.03	0.06	0.14	0.01	8	0.034	0.75	0.05	1.43	0.01	7.903	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.70	0.003	2.5	2.5
7/29/04	210	4	15	0.4	13	7.0	1	7	270	300	8.2	3	0.36	0.002	0.5	0.002	65	0.01	0.03	0.06	0.93	0.01	6.1	0.48	0.75	0.05	1.9	0.01	31	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
9/20/04	100	4	13	0.4	6.2	8.9	1	8.9	200	280	8.2	4.9	0.4	0.002	0.5	0.002	46	0.01	0.03	0.06	3.60	0.01	8.4	0.29	0.75	0.05	2.5	0.01	19	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
12/7/04	94	4	12	0.4	5.4	9.3	1	9.3	220	280	8.2	3	0.38	0.002	0.5	0.002	46	0.01	0.03	0.06	0.66	0.01	7.9	0.15	0.75	0.05	1.7	0.01	9.9	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	1.2	0.003	2.5	2.5
1/25/05	86	4	14	0.4	5.1	9.1	1	9.1	210	270	7.9	3	0.02	0.002	0.5	0.002	48	0.01	0.03	0.06	2.8	0.01	7.9	0.22	0.75	0.05	2.1	0.01	8.1	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
3/11/05	54	4	13	0.4	5.1	9.8	1	9.8	200	300	8.2	3	0.41	0.002	0.5	0.002	48	0.01	0.03	0.06	1.0	0.01	9.3	0.094	0.75	0.05	1.4	0.01	7.7	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
3/11/05	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.10	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/5/05	90	2	13	0.4	4.9	10.0	1	10	200	300	8.1	3	0.52	0.002	0.5	0.002	71	0.01	0.03	0.05	0.37	0.01	8.7	0.260	0.75	0.05	1.5	0.01	5.8	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
10/5/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.0044	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/25/06	76	2	12	0.4	4.5	9.5	1	9.8	190	310	7.99	3	0.44	0.002	0.5	0.002	41	0.01	0.03	0.06	0.19	0.01	7.4	0.046	0.75	0.05	1.1	0.01	5.0	2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	0.5	0.003	2.5	2.5
4/25/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.0020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/9/06	85	0.4	12	0.4	4.7	9.5	--	9.8	180	310	7.9	2	0.47	0.03	0.1	0.002	47	0.01	0.03	0.06	0.25	0.01	8.0	0.13	0.75	0.05	1.0	0.01	4.7	2.5	0.08	0.05	--	--	--	--	--	--	1.0	--	--	--
11/9/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/18/07	90	--	12	--	4.5	9.6	--	--	190	290	7.92	--	--	--	--	--	--	--	--	--	0.21	--	8.2	0.19	--	--	1.2	--	5.5	--	--	--	--	--	--	--	--	--	1.0	--	--	--
5/18/07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.082	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/20/08	87	2	12	--	4.5	9.3	--	--	180	290	7.95	--	--	--	--	--	38	--	--	--	0.1	--	8.2	0.03	--	--	1.0	--	5.3	--	--	--	--	--	--	--	--	--	1.0	--	--	--
2/20/08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10/16/08	83	2	12	--	4.5	9.5	--	--	180	290	7.73	--	0.44	--	--	--	34	--	--	--	0.05	--	8	0.002	--	--	1.1	--	5.2	--	--	--	--	--	--	--	--	--	1.0	--	--	--
10/16/08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/12/09	82	2	12	--	4.5	8.9	--	--	170	290	8.01	--	--	--	--	--	37	--	--	--	0.1	--	8.5	0.01	--	--	1.3	--	5.2	--	--	--	--	--	--	--	--	--	1.0	--	--	--
5/12/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/21/09	90	2	14	--	5.0	9.6	--	--	206	280	7.92	--	--	--	--	--	47.2	--	--	--	1.1	--	8.4	0.12	--	--	1.4	--	4.8	--	--	--	--	--	--	--	--	--	1.0	--	--	--
12/21/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
131 Lugar De Oro																																											
7/9/03			21.0	0.19	26	10							0.64			0.002	91	0.006				0.005		0.0077			1.0	0.005	9.9					0.02	0.022			0.0002				
7/16/08	226		18.8		22		<0.1	11	386		7.9	0.01	0.6	0.001	0.1	0.001	100	0.001	0.001	0.00	0.10	0.00	8	0.002	0.001	0.01	0.0	0.001		0.005	0.003	0.04	0.001	0.001		0.001			2			
400 Graham Ave.																																											
7/11/03			17	0.16	15.0	7.7							0.37			0.002	64	0.006				0.005		0.0032			1.6	0.005	12					0.02	0.02			0.0002				
12/21/09							0.13	8.4																															2			
10/31/08	181		10		10				262		8.2						55.2						7.62				2.0		11.7														
8/19/08												0.01	0.1	0.001	0.1	0.001	1.0	0.001	0.001	0.04	0.10		1.0	0.001	0.001	0.01	1.0	0.001		0.001	0.011	0.01	0.001	0.005	0.005	0.001						
1113 N Luna Circle																																											
12/21/09							<0.1	8.4																															2			
8/19/08	212		10.7		11.2				342		7.97	0.01	0.3	0.001	0.1	0.001	79	0.001	0.001	0.01	0.10	0.001	5.04	0.001	0.001	0.01	1.0	0.001	12.4	0.005	0.006	0.04	0.001	0.003	0.005	0.001						

Golder Associates

TABLE 2b
INORGANIC, PHENOLICS AND TOTAL ORGANIC CARBON WATER PARAMETERS
PASEO DE VISTA LANDFILL MONITOR WELLS 1-8, ORTIZ PARK MONITOR WELL NO. 1
AND OTHER AREA WELLS

	Inorganics																																						TOC	Total Phenolics	Radium	
Method	310.1		300.0				351	calc	160	120	150	6010c																			6020				335	7470a	A5310C	420.3	903.0, 904.0	
Analytes	HCO3	CO_3	Chloride	Flouride	Sulfate	Nitrate	Total Kjeldahl Nitrogen	Total Nitrogen	Total Dissolved Solids	Conductivity	pH	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Silver	Sodium	Uranium	Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Cyanide	Mercury	Total Organic Carbon	Total Phenolics	Radium 226	Radium 228
G.W.P.S.			250	1.6	250	10		10	500	0.01	0.1	5	1	0.004	0.8	0.005		0.05	0.05	1.00	0.3	0.05		0.05	1	0.1		0.05		5		5	0.006	0.05	0.01	0.002	0.2	0.002		0.005	5	5
PQL	20		2	0.4	2.5	1		1	5			3	0.02	0.002	0.5	0.002		0.01	0.03	0.05	0.1	0.01		0.03	0.75	0.05		0.01		2.5	0.08	0.05	0.003	0.01	0.005	0.001	0.1	0.001	1	0.003	2.5	2.5
AML presumptive			187.5	1.2	187.5	5.0		5.0	375			2.5	0.75	0.002	0.4	0.0025		0.025	0.025	0.5	0.225	0.025		0.0375	0.5	0.05		0.025		2.5		2.5	0.003	0.025	0.005	0.001	0.1	0.001		0.0025	2.5	2.5
Alameda Exxon DBS 1D																																										
8/28/08												1.5	0.2	0.001	0.1	0.001	97	0.003	0.001	0.01	**1.20**	0.003	8	0.029	0.001	0.01		0.001		0.003	0.001	0.08	0.001	0.001	0.005	0.001						
12/21/09							0.1	**7.8**				1.5	0.2	0.001	0.1	0.001	97	0.003	0.001	0.01	**1.20**	0.003	8	0.029	0.001	0.01	1.0	0.001		0.003	0.001	0.08	0.001	0.001	0.005	0.001			2			
5/29/09	205		20.7		30		0.1		348		7.88	1.4	0.3	0.001	0.1	0.001	84.3	0.003	0.001	0.01	**1.20**	0.005	6.81	**0.15**	0.001	0.01	1.18	0.001	15.3		<0.1	0.20	0.001	0.001	0.005	0.001			2			

Notes:

All units milligrams per liter (except conductivity, micromhos/cm^3)

Analytes above the PQL are listed in red

Analytes exceeding Presumptive Assessment Monitoring Levels in boldface red type

Analytes exceeding groundwater protection standard highlighted yellow

2nd analysis (all dates) for dissolved (field filtered) Fe & Mn

TABLE 2c
SUMMARY OF SEMIVOLATILE WATER QUALITY DATA
PASEO DE VISTA LANDFILL AND ORTIZ PARK ARA WELLS

Method: Semi-Volatile Organic Compounds, 8270

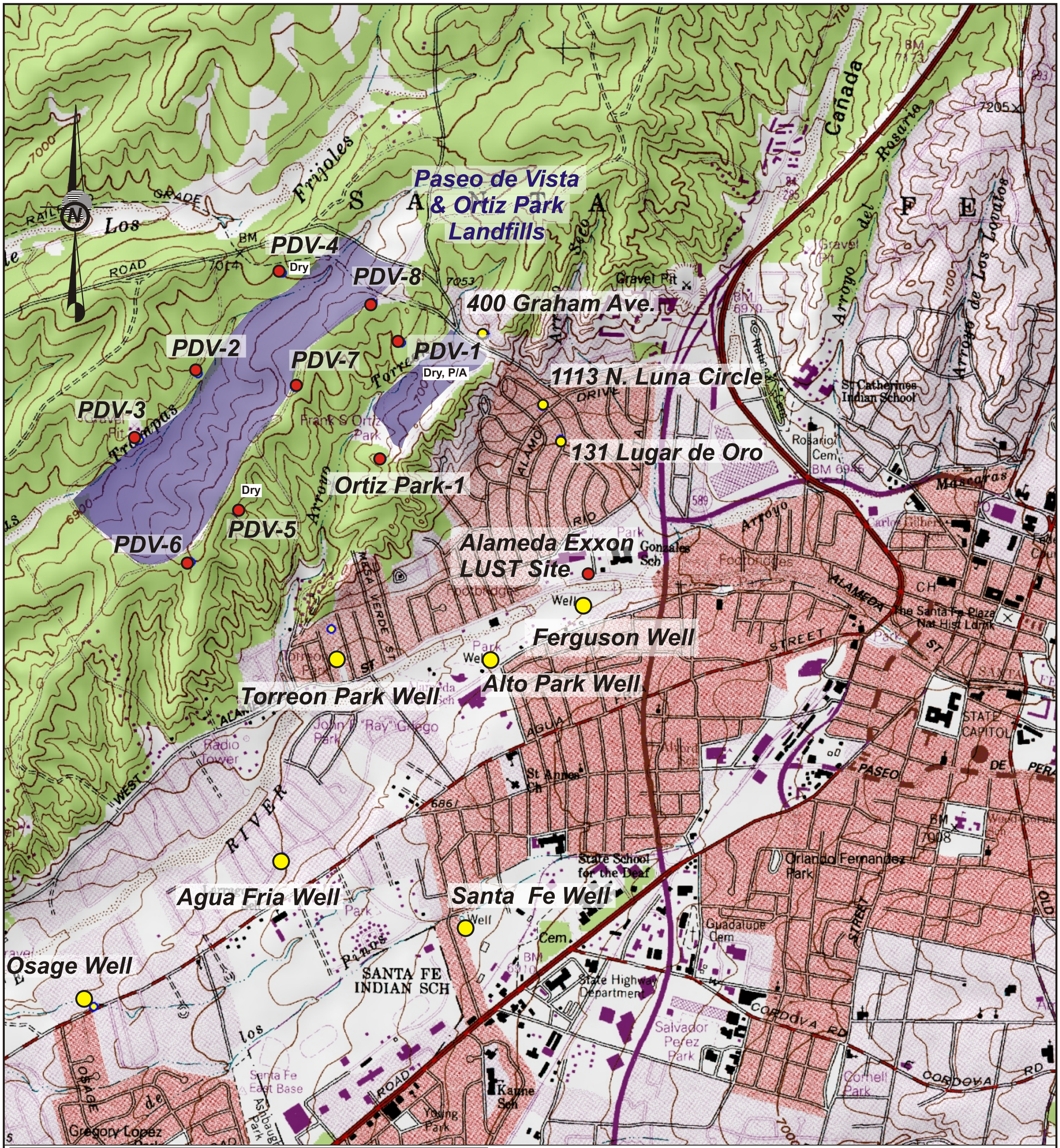
Analytes	Acenaphthene	Acenaphthylene	Acetophenone	Allyl Chloride	Aniline	Anthracene	Aramite	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl Alcohol	bis (2-Chloroethyl) ether	bis (2-Chloroethoxy) methane	bis (2-Chloroisopropyl) ether	bis (2-Ethylhexyl) phthalate	Butylbenzylphthalate	Chlorobenzilate	Chloroprene	Chrysene	Diallate	Dibenz(a,h)anthracene	Dibenzofuran	Diethylphthalate	Dimethoate	Dimethylphthalate	di-n-Butylphthalate	di-n-Octylphthalate	Diphenylamine	Disulfoton	Ethyl Methacrylate	Ethyl Methanesulfonate	Famphur	Fluoranthene	Fluorene	Hexachlorobenzene	Hexa chlorocyclopentadiene	Hexachloroethane	Hexachlorophene	Hexachloropropene	Indeno(1,2,3-cd)pyrene	Isodrin	Isophorone	Isosafrole	Kepone	Methapyrilene	Methyl Methanesulfonate	Methyl parathion	Nitrobenzene	n-Nitroso-diethyl-amine	n-Nitroso-dimethyl-amine	n-Nitroso-di-n-butylamine	n-Nitroso-di-n-propylamine	n-Nitrosodiphenylamine	n-Nitrosomethylethylamine	n-Nitrosomorpholine	n-Nitrosopiperidine	n-Nitrosopyrrolidine	O,O,O-Triethylphosphorothioate	o-Toluidine	Parathion
G.W.P.S																																					1	50																								
PQL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AML presumptive																																					0.5	25																								
PDV MW-2																																																														
12/21/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PDV MW-6																																																														
12/21/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.32	1	1	1	1	1	1	1	1	1	1	0.1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PDV MW-8																																																														
12/21/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.31	1	1	1	1	1	1	1	1	1	1	0.1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ortiz Park-1																																																														
12/21/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.00	1	1	1	1	1	1	1	1	1	1	0.07	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Alameda Exxon 1-Deep																																																														
12/21/09	1	1	1	1	1	1	1	1	1	1	1	1	0.3	1	1	1	4	1	1	1	1	1	1	1	0.9	1	1	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1113 North Luna Circle																																																														
12/21/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
400 Grame Ave																																																														
12/21/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
131 Lugar de Oro																																																														
12/21/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	25.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Method: Semi-Volatile Organic Compounds, Continued, 8270

Analytes	p-Dimethylaminoazobenzene	Pentachlorobenzene	Pentachloroethane	Pentachloronitrobenzene	Pentachlorophenol	Phenacetin	Phenanthrene	Phenol	Phentermine	Phorate	Pronamide	Propionitrile	Pyrene	Pyridine	Safrole	Sulfotep	Thionazin	1,2,4-Trichlorobenzene	1,2,4,5-Tetrachlorobenzene	1,3,5-Trinitrobenzene	1,3-Dichlorobenzene	1,3-Dinitrobenzene	1,4-Benzenediamine	1,4-Dichlorobenzene	1,4-Naphthoquinoline, 1-oxide	1,4-Napthoquinone	1,4-Naphthylamine	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Acetylaminofluorene	2-Chloronaphthalene	2-Chlorophenol	2-Methylbenzenamine	2-Methylnaphthalene	2-Methylphenol	2-Naphthylamine	2-Nitroaniline	2-Nitrophenol	2-Picoline	3,3-Dichlorobenzidine	3,3-Dimethylbenzidine	3-Methylcholanthrene	3-Methylphenol	3-Nitroaniline	4,6-Dinitro-2-methylphenol	4-Aminobiphenyl	4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol	4-Nitroaniline	4-Nitrophenol	5-Nitro-o-toluidine
G.W.P.S					1																																																								
PQL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**1**
AML presumptive					0.5																																																								
PDV MW-2																																																													
12/221/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
PDV MW-6																																																													
12/221/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
PDV MW-8																																																													
12/221/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Ortiz Park -1																																																													
12/221/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Alameda Exxon 1-Deep																																																													
12/221/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1113 North Luna Circle																																																													
12/21/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
400 Graham Ave																																																													
12/21/09	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

Notes:
All units micrograms per liter
Analytes above the PQL are listed in red
Analytes exceeding Presumptive Assessment Monitoring Levels in boldface red type
Analytes exceeding groundwater protection standard highlighted yellow
PQLs vary, but are less than 1 microgram per liter

FIGURES



Explanation

MW-6 ● Location of groundwater monitor well

● ● Location of municipal, domestic supply well

0 — Scale, feet — 5000

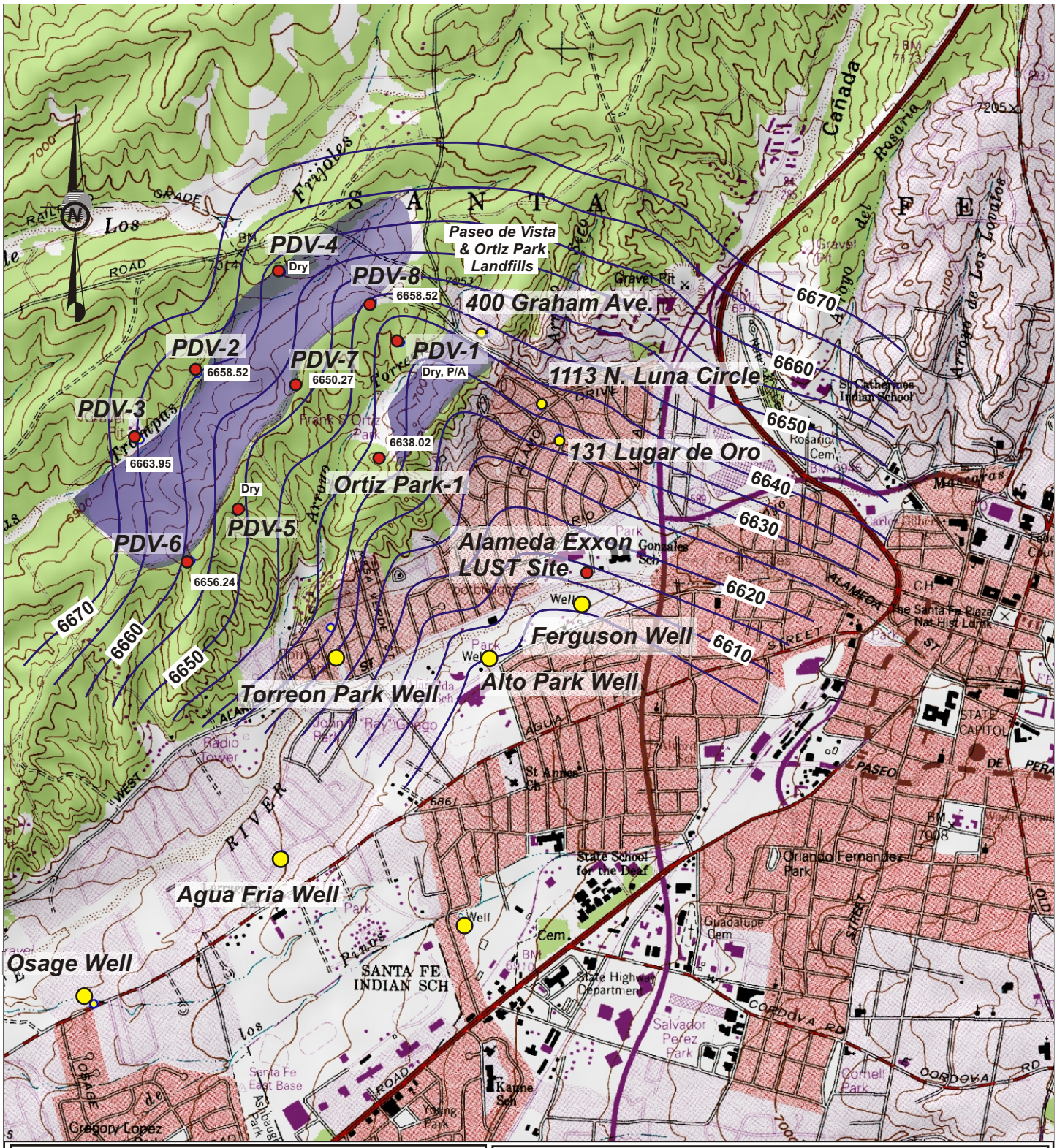
PROJECT

Paseo de Vista Landfill
Stage 1 Abatement Amendment

TITLE

Figure 1.-- Vicinity and Well Location Map

Golder Associates



Explanation

MW-6
6656.24 — Location of groundwater monitor well showing water table altitude, feet

6605 — Isopleth on water table showing water table elevation in feet above MSL

Location of municipal, domestic supply well

0 — Scale, feet — 5000

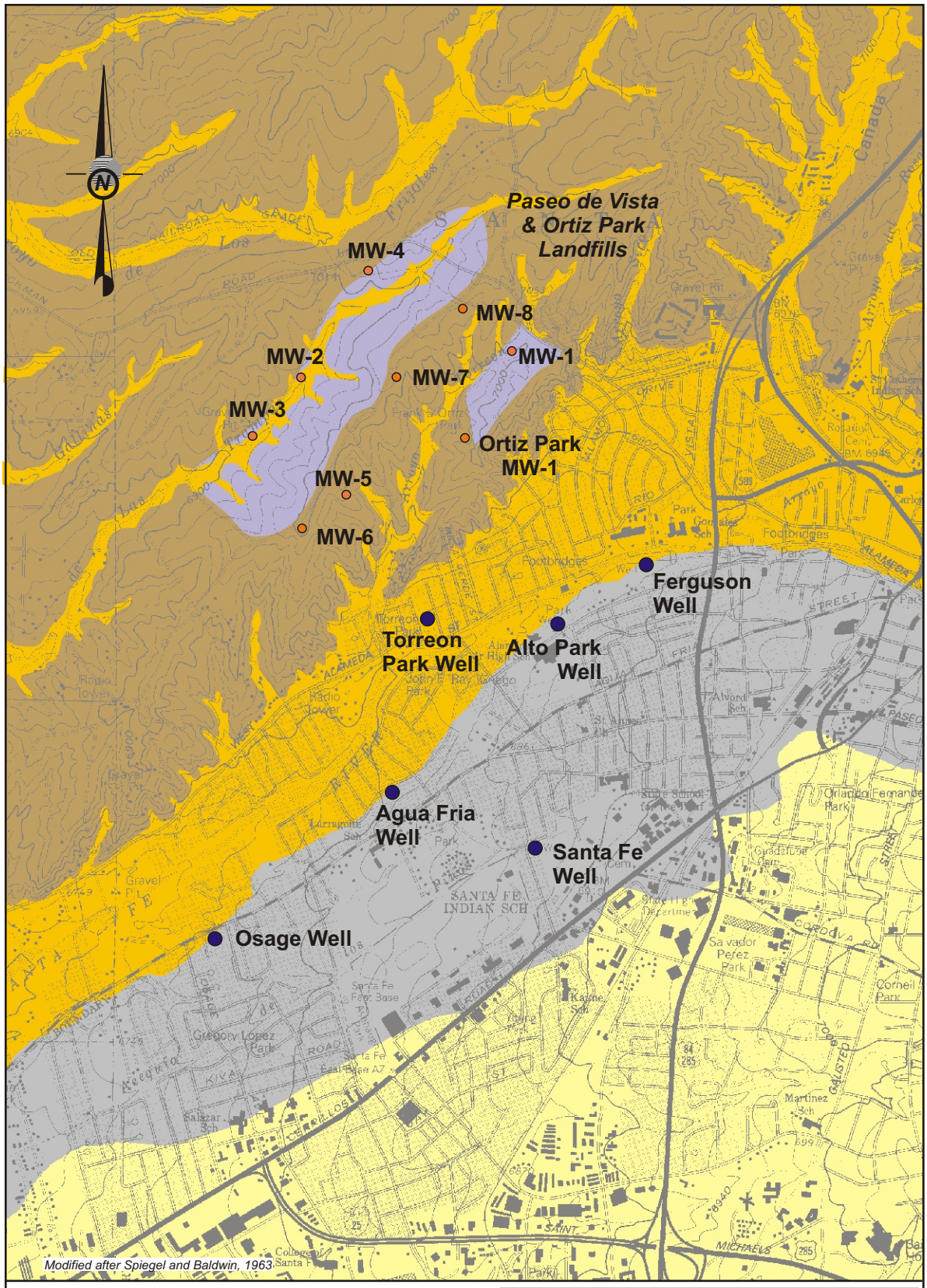
PROJECT

Paseo de Vista Landfill
Stage 1 Abatement Plan Amendment

TITLE

Figure 2.--Water Table 12/21/09

Golder Associates



EXPLANATION

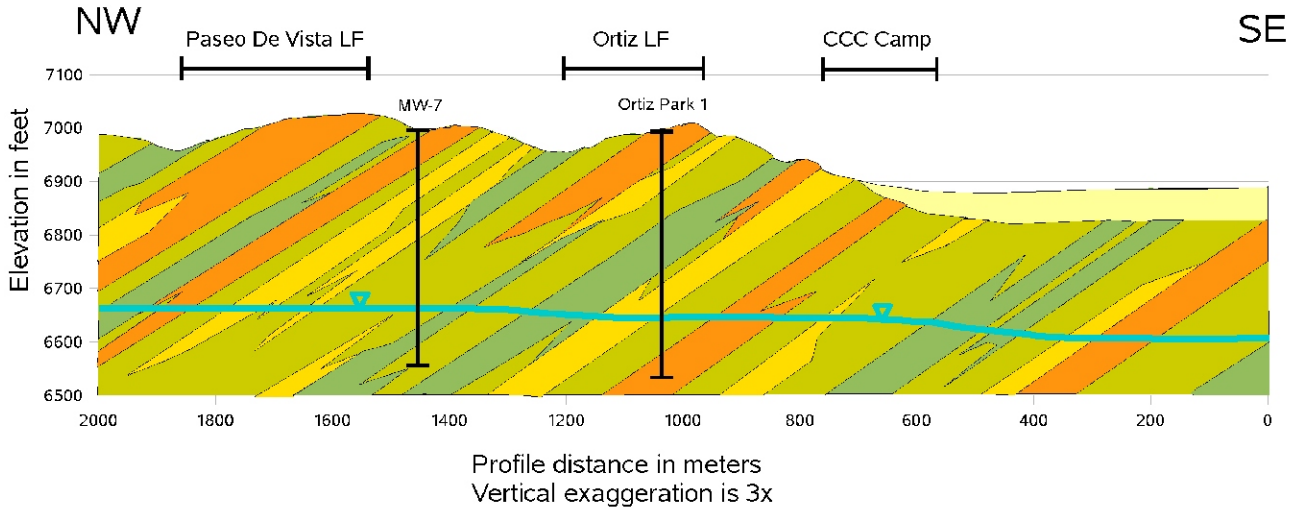
- Quaternary Alluvium
- Quaternary Terrace deposit
- Quaternary Ancha
- Landfill areas
- Tertiary Tesuque Fm.

0 Scale, feet 5000

PROJECT
Ortiz Park Landfill
Stage 1 Abatement Plan Amendment

TITLE
Figure 3.--Surficial Geology in the vicinity of Ortiz Park Santa Fe New Mexico

Golder Associates



Water table

Alluvium

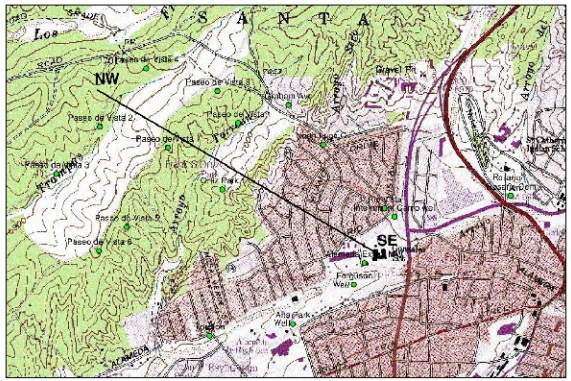
Sandy clay

Silty sand

Clean sand

Gravel and gravelly sand

Map showing the location of the section

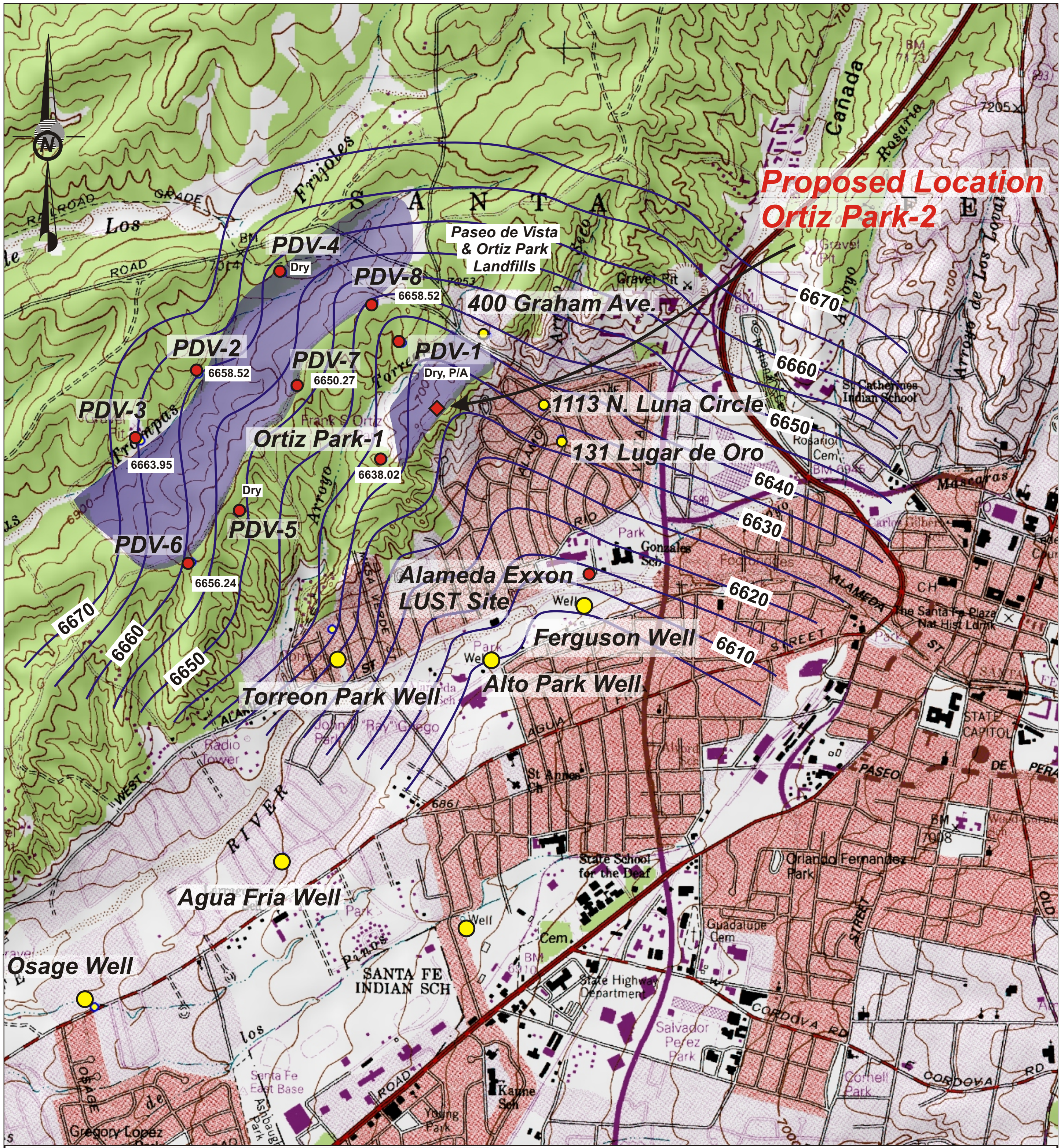


From: Lee Wilson and Associates, February 2010

PROJECT **Ortiz Park Landfill**
Stage 1 Abatement Plan Amendment

TITLE
Figure 4.--Conceptual Hydrogeologic Cross Section
Ortiz Park
Santa Fe New Mexico

Golder Associates



Explanation

MW-6
6656.24 — Location of groundwater monitor well showing water table altitude, feet

6605 — Isopleth on water table showing water table elevation in feet above MSL

Location of municipal, domestic supply well

0 — *Scale, feet* — 5000

PROJECT

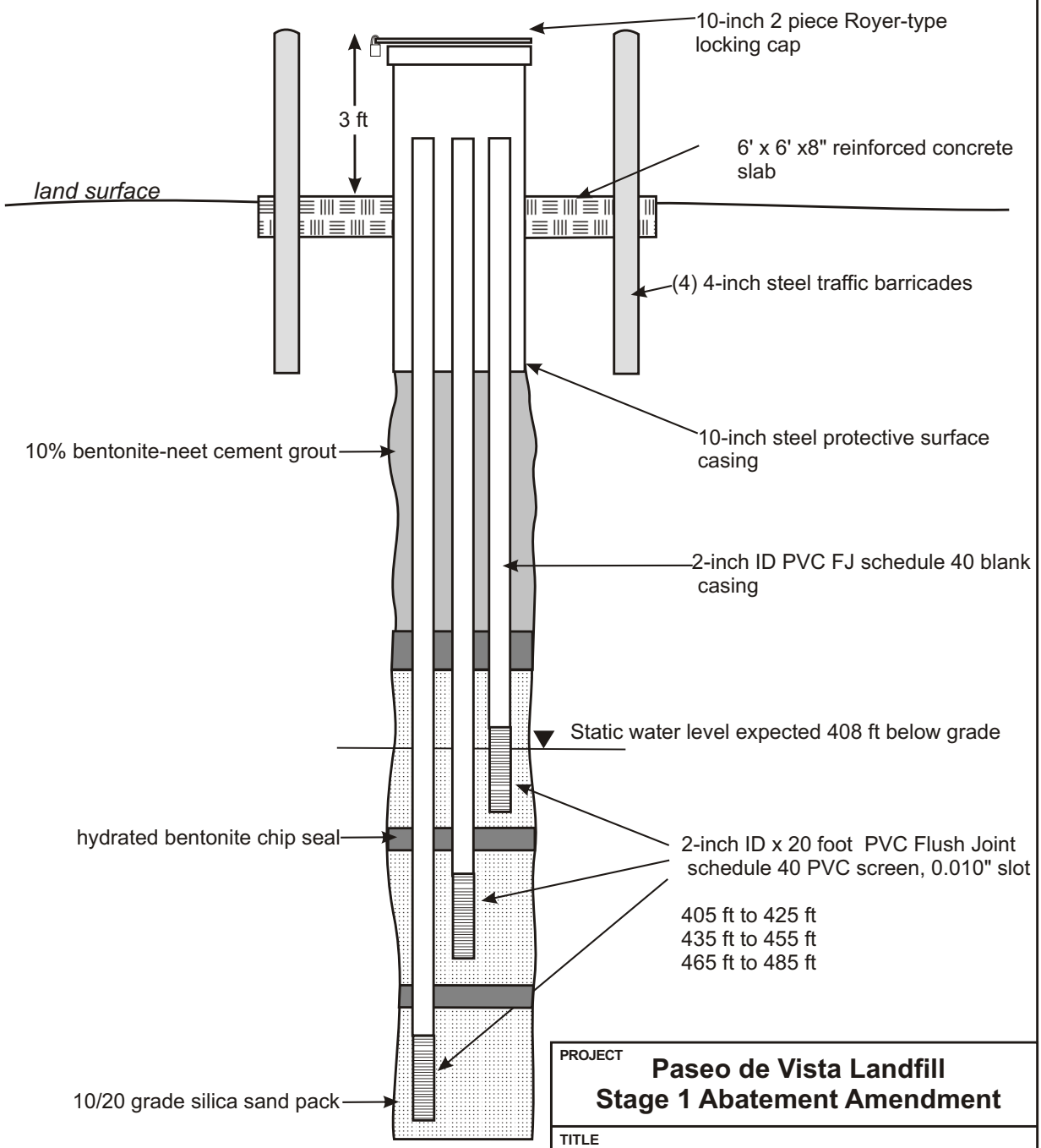
Paseo de Vista Landfill
Stage 1 Abatement Plan Amendment

TITLE

Figure 5.--Proposed Location for Ortiz Park Monitoring Well 2

Golder Associates

Well Completion Details
Ortiz Park Landfil
Monitoring Well No 2
Completion Details



PROJECT

Paseo de Vista Landfill
Stage 1 Abatement Amendment

TITLE

Figure 6.-- Proposed Completion
Ortiz Park Well No. 2

Golder Associates

APPENDIX A

COPIES OF NMED-GWQB CORRESPONDENCE RELATED TO PROJECT

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

1190 St. Francis Drive, P.O. Box 5469
Santa Fe, New Mexico 87502
Phone (505) 827-2900 Fax (505) 827-2965
www.nmenv.state.nm.us

BILL RICHARDSON
Governor
DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary
JON GOLDSTEIN
Deputy Secretary

Rcvd 8/27/09

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

August 26, 2009

William DeGrande
City of Santa Fe
Solid Waste Department
1142 Siler Road
Santa Fe, New Mexico 87504

RE: Stage 1 Abatement Plan for Ortiz Park Landfill, Santa Fe, New Mexico

Dear Mr. DeGrande:

The New Mexico Environment Department (NMED) hereby notifies the City of Santa Fe Solid Waste Division that additional information is required to design and perform an adequate site investigation for the Stage 1 Abatement Plan at the site referenced above. The site is a former landfill and is located at the corner of Camino de las Crucitas and Buckman Road in Santa Fe, New Mexico. An Abatement Plan was required for the site in a letter dated November 22, 2002 that required the submittal of a proposal to conduct a site investigation that would adequately define site conditions and provide the data necessary to select and implement an expeditious abatement option.

The previous Stage 1 Abatement Plan report, submitted by URS to the City of Santa Fe Solid Waste Management Division on April 30, 2003, documents the ground water flow to the southeast. The monitoring wells were subsequently installed upgradient of the direction of flow; therefore the data collected more accurately depicted the Paseo de Vista Landfill and not the Ortiz Landfill. Ground water is at a depth of approximately 354 feet.

Baird Swanson, NMED Remediation Oversight Section, in response to Golder and Associates Groundwater Monitoring Report, Paseo de Vista Landfill, Ortiz Park, City of Santa Fe, July 3, 2006, met with City of Santa Fe Officials October 06, 2006 to discuss the installation of down-gradient monitoring wells for the Ortiz Landfill. Three additional meetings (the last on May 27, 2009) and two site visits (City and NMED attending) have taken place since that date.

Pursuant to the Water Quality Control Commission (WQCC) Regulations, a Stage 1 Abatement Plan proposal shall be prepared and submitted to NMED within sixty (60) days from receipt of this notice. The proposal shall include a site investigation work plan that defines:

1. site geology and hydrogeology;
2. plans to assess the vertical and horizontal extent of soil and ground water contamination downgradient of the site;
3. plans for the installation of soil borings and monitoring wells.
4. a monitoring program, including sampling stations and frequencies for the duration of the abatement plan;
5. a quality assurance project plan; and
6. a health and safety plan for all work to be performed pursuant to the abatement plan.

The overall objective of the Stage 1 Abatement Plan is to define the extent of any contamination emanating from the site. NMED will review the sufficiency of the proposed Stage 1 Abatement Plan.

The City of Santa Fe is strongly encouraged to confer with NMED during the preparation of this Stage 1 Abatement Plan. If you have questions or concerns, please contact Ross Muir, Project Manager, at (505) 827-0078 in Santa Fe or Bart Faris, Team Leader, at: (505) 222-9521 in Albuquerque. Thank you for your cooperation in this matter.

Sincerely,

Alex A. Puglisi for

William C. Olson, Chief
Ground Water Quality Bureau

cc: Lawrence Garcia, COSF Solid Waste Management Division
Robert Gallegos, COSF Environmental Specialist
Ross Muir, NMED, GWQB
ROS Reading File

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

BILL RICHARDSON
Governor
DIANE DENISH
Lieutenant Governor

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Santa Fe, New Mexico 87502-5469
Phone (505) 827-2900 Fax (505) 827-2965
www.nmenv.state.nm.us

RON CURRY
Secretary
JON GOLDSTEIN
Deputy Secretary

October 20, 2009

William DeGrande, Director
City of Santa Fe
~~Solid Waste Department~~
1142 Siler Road
Santa Fe, New Mexico 87504

RE: Abatement Plan Time Extension, former Ortiz Landfill, Santa Fe, New Mexico

Dear Mr. DeGrande:

The New Mexico Environment Department (NMED) received a written request on September 26, 2009 for a time extension to submit a revised Stage 1 Abatement Plan proposal for the above referenced site. NMED issued a letter dated August 26, 2009 requiring the submittal of a revised Stage 1 Abatement Plan proposal within sixty (60) days of receipt of the letter. The time extension requests an additional sixty (60) days to submit the proposal.

Pursuant to New Mexico Water Quality Control Commission Regulation the Stage 1 Abatement Plan proposal shall be submitted to NMED no later than December 26, 2009.

If you have any questions please contact me at (505) 827-2754, or Ross Muir, Project Manager, at (505) 827-0078. Thank you for your cooperation in this matter.

Sincerely,

Alex A. Puglisi

Alex Puglisi, Program Manager
Remediation Oversight Section
Ground Water Quality Bureau

cc: Lawrence Garcia, COSF Solid Waste Management Division
Robert Gallegos, COSF Environmental Specialist
Ross Muir, NMED, GWQB
ROS Reading File

ATTN: ROBERT GALLEGOS

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

1190 St. Francis Drive, P.O. Box-5469
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Phone (505) 827-2900 Fax (505) 827-2965
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BILL RICHARDSON
Governor
DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary

January 29, 2010

William DeGrande, Director
City of Santa Fe
Solid Waste Department
1142 Siler Road
Santa Fe, New Mexico 87504

Re: Stage 1 Abatement Plan Proposal for the former Ortiz Park Landfill, Santa Fe, New Mexico

Dear Mr. DeGrande:

The New Mexico Environment Department (NMED) is in receipt of the City of Santa Fe's (City) correspondence dated December 15, 2009 for the site referenced above. The site is a former landfill and is located at the corner of Camino de las Crucitas and Buckman Road in Santa Fe, New Mexico. The City's letter requests a time extension to submit a Stage 1 Abatement Plan proposal.

The December 15, 2009 letter proposes to evaluate potential ground water models to determine gradient and flow rates due to the complex geology, perform ground water sampling, and research historical sites as potential contaminant sources. NMED views this as a first step of the Stage 1 Abatement Plan.Therefore, additional time to complete these tasks and submit a finalized Stage 1 Abatement Plan proposal is granted. A complete proposal shall be submitted to NMED no later than March 1, 2010. This proposal shall include, at a minimum, the following information:

1. Requirements as specified in NMED's letter dated August 26, 2009;
2. Results of ground water model evaluations;
3. Ground water analytical results;
4. Historical site review; and
5. A plan to install additional monitoring wells with locations and installation specifications. Be advised that Ortiz monitoring well MW-1 does not meet NMED specifications due to its long screen interval.

The purpose of a Stage 1 Abatement Plan is to design and conduct a site investigation that provides data necessary to select and implement an expeditious abatement option. The City is strongly encouraged to confer with NMED during the preparation of this Stage 1 Abatement Plan proposal.

If you have any questions or need help, please contact Ross Muir, Project Manager, at (505) 827-0078, or Bart Faris, Team Leader, at (505) 222-9521. Thank you for your cooperation in this matter.

Sincerely,

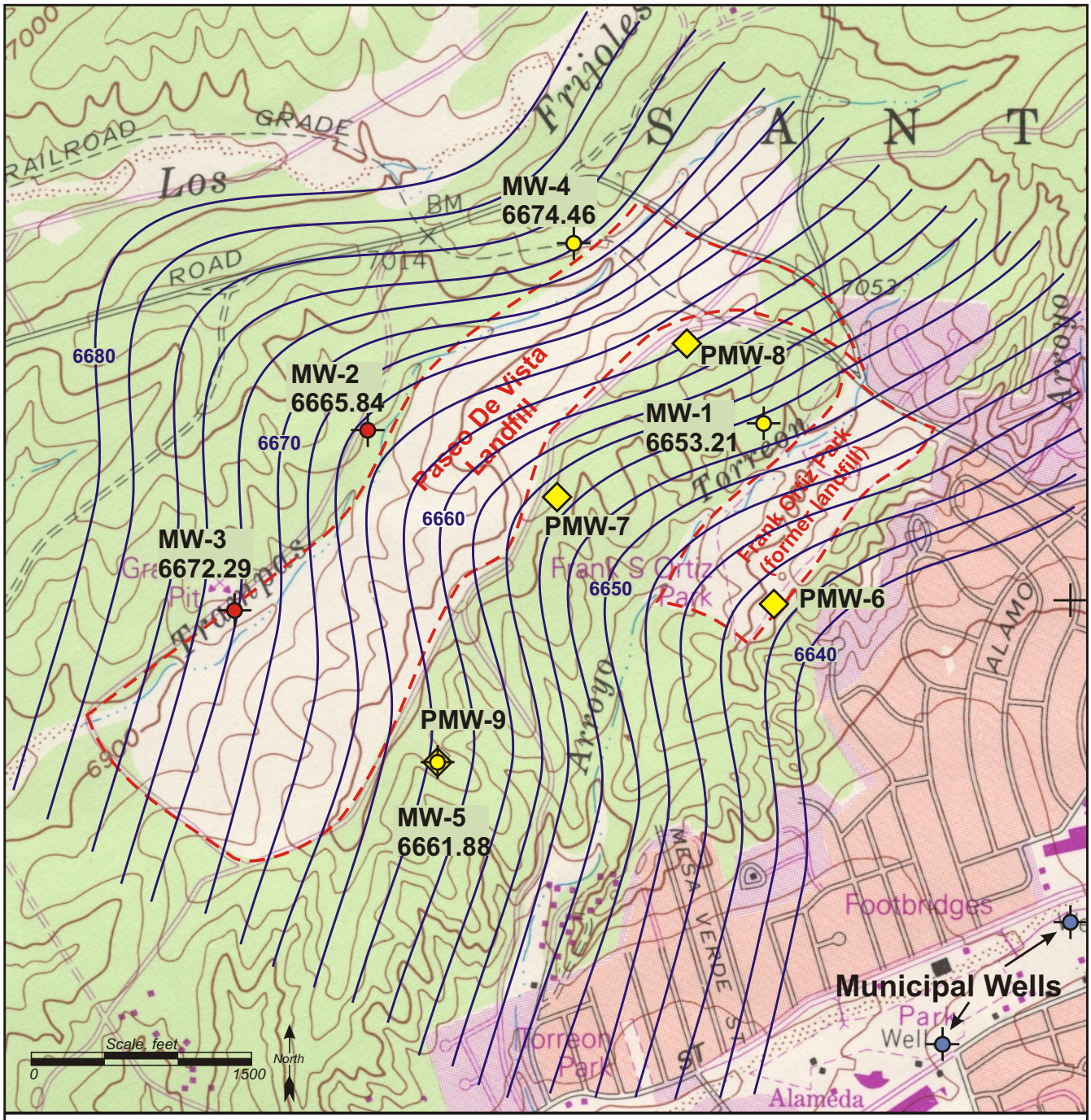
Alex A. Puglisi

Alex A. Puglisi, Program Manager
Remediation Oversight Section
Ground Water Quality Bureau

cc: Lawrence Garcia, COSF Solid Waste Management Division
Robert Gallegos, COSF Environmental Specialist
Ross Muir, NMED, GWQB
ROS Reading File

APPENDIX B

MAP SHOWING PROPOSED LOCATION OF ORTIZ PARK WELL NO. 1
(2003 STAGE 1 PLAN)



Explanation

MW-1 6653.21	Groundwater monitor well showing water table elev.(ft) above MSL, 4-17-03
MW-5 6661.88	Groundwater monitor well with expected life <5 years
PMW-6	Proposed monitor well location
6670	Isopleth on water table elevation ft above MSL on 4-17-03

Santa Fe
USGS 7.5' Sheet
1993

Figure 3

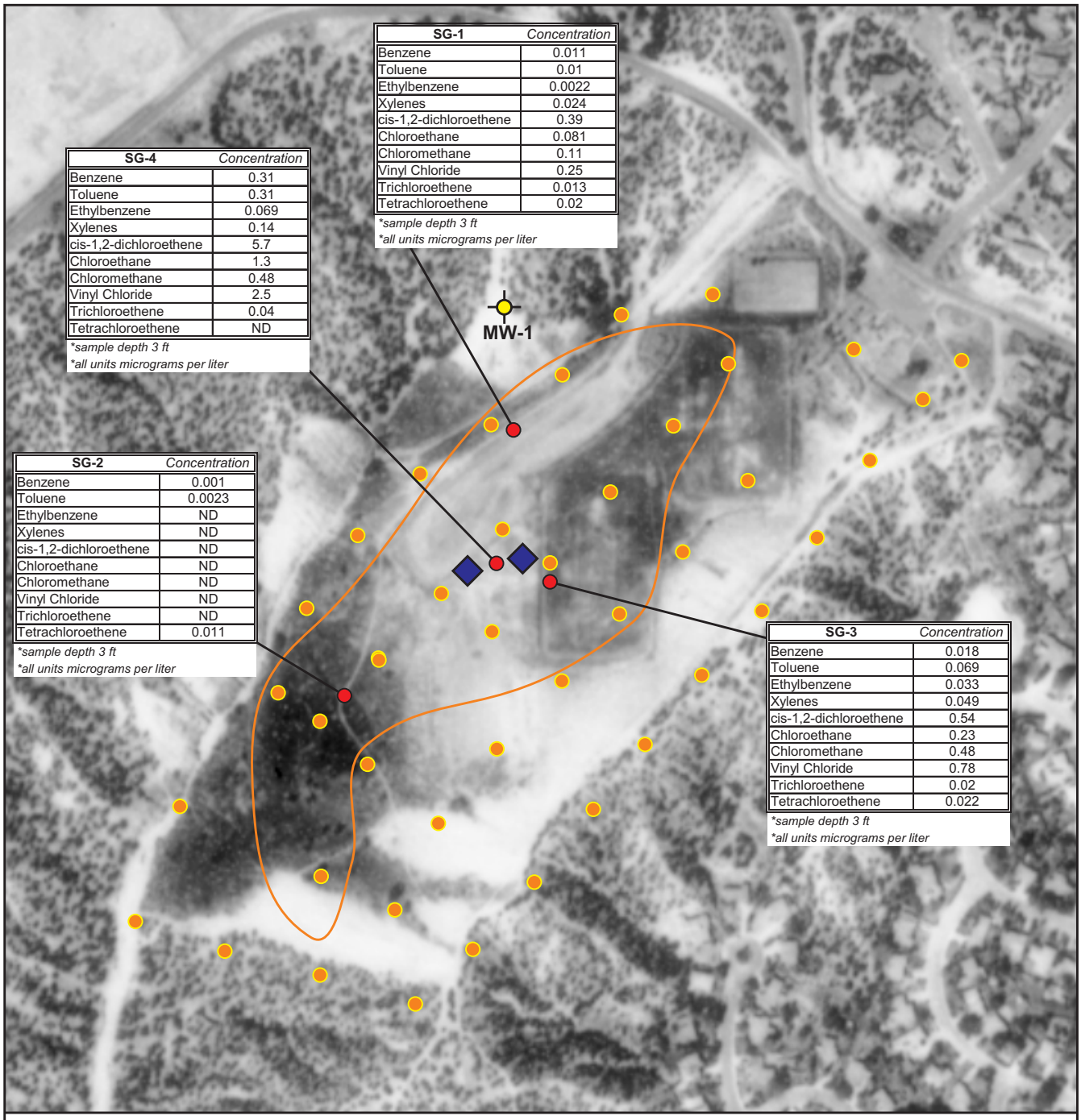
Water table configuration, existing and proposed groundwater monitor wells, Ortiz Park and Paseo de Vista Landfill

URS

created by: LCK 4-25-03

APPENDIX C

SUMMARY OF ORTIZ PARK SOIL VAPOR VOC INVESTIGATIONS, CDM, 1993; URS, 2003



SG-1	Concentration
Benzene	0.011
Toluene	0.01
Ethylbenzene	0.0022
Xylenes	0.024
cis-1,2-dichloroethene	0.39
Chloroethane	0.081
Chloromethane	0.11
Vinyl Chloride	0.25
Trichloroethene	0.013
Tetrachloroethene	0.02

*sample depth 3 ft
*all units micrograms per liter

SG-4	Concentration
Benzene	0.31
Toluene	0.31
Ethylbenzene	0.069
Xylenes	0.14
cis-1,2-dichloroethene	5.7
Chloroethane	1.3
Chloromethane	0.48
Vinyl Chloride	2.5
Trichloroethene	0.04
Tetrachloroethene	ND

*sample depth 3 ft
*all units micrograms per liter

SG-2	Concentration
Benzene	0.001
Toluene	0.0023
Ethylbenzene	ND
Xylenes	ND
cis-1,2-dichloroethene	ND
Chloroethane	ND
Chloromethane	ND
Vinyl Chloride	ND
Trichloroethene	ND
Tetrachloroethene	0.011

*sample depth 3 ft
*all units micrograms per liter

SG-3	Concentration
Benzene	0.018
Toluene	0.069
Ethylbenzene	0.033
Xylenes	0.049
cis-1,2-dichloroethene	0.54
Chloroethane	0.23
Chloromethane	0.48
Vinyl Chloride	0.78
Trichloroethene	0.02
Tetrachloroethene	0.022

*sample depth 3 ft
*all units micrograms per liter

Explanation

1993 elevated methane soil vapor dist.

1993 methane soil vapor sample location

1993 VOC soil vapor sample location

MW-1 Groundwater monitor well location

Proposed soil vapor VOC sample location

0 Scale, feet 1000

Figure 2

Methane and VOC soil vapor survey data (1993) and Stage 1 Abatement Plan VOC soil vapor sample locations, July 17, 2003

URS

Created by: LCK 8-7-03

Table 1.--Volatile Organic Vapor Analyses
Ortiz Park, Santa Fe, New Mexico
July 17, 2003

Soil Vapor Sample Location and Depth	8260 (Volatile Organics)	Benzene	Toluene	Ethylbenzene	Methyl tert-butyl ether (MTBE)	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1,2-Dichloroethane (EDC)	1,2-Dibromoehane (EDB)	Napthalene	1-Methylnapthalene	2-Methylnapthalene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	2-Chlorotoluene	4-Chlorotoluene	cis-1,2-DCE	cis-1,3-Dichloropropene	1,2-Dibromo-3-Chloropropane	Dibromochloromethane	Dibromomethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene
Minimum report limits (µg/l)		0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20	0.40	0.40	0.10	0.10	0.10	0.20	0.10	0.10	0.20	0.10	0.10	0.10	0.10	1.00	0.10	0.20	0.10	0.20	0.10	0.10	0.10
SB-1, 10 feet		5.0	1.3	1.5	ND	0.6	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	35	ND	ND	ND	ND	ND	ND	ND
SB-1, 15 feet		0.26	0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND
SB-1, 20 feet		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.29	ND	ND	ND	ND	ND	ND	ND
SB-1, 25 feet		3.3	1.2	1.3	ND	1.1	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30	ND	ND	ND	ND	ND	ND	ND
SB-1, 30 feet		1.5	0.61	0.48	ND	0.32	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	26	ND	ND	ND	ND	ND	ND	ND
SB-2, 10 feet		1.2	1.4	1.0	ND	0.85	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	49	ND	ND	ND	ND	ND	ND	ND
SB-2, 15 feet		0.63	0.93	0.55	ND	0.91	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30	ND	ND	ND	ND	ND	ND	ND
SB-2, 20 feet		1.1	0.89	0.37	ND	0.46	0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	49	ND	ND	ND	ND	ND	ND	ND
SB-2, 25 feet		1.1	0.76	0.30	ND	0.62	0.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	37	ND	ND	ND	ND	ND	ND	ND
SB-2, 30 feet		0.78	0.45	0.12	ND	0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	25	ND	ND	ND	ND	ND	ND	ND

Soil Vapor Sample Location and Depth	8260 (Volatile Organics)	Dichlorodifluoromethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloropropane	1,3-Dichloropropane	2,2-Dichloropropane	1,1-Dichloropropene	Hexachlorobutadiene	Isopropylbenzene	4-Isopropyltoluene	Methylene Chloride	n-Butylbenzene	n-Propylbenzene	sec-Butylbenzene	Styrene	tert-Butylbenzene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachlorethene (PCE)	trans-1,2-DCE	trans-1,3-Dichloropropene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichlorethene (TCE)	Trichlorofluoromethane	1,2,3-Trichloropropane	Vinyl Chloride	Xylenes, Total	Total VOC's
Minimum report limits (µg/l)		1.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.30	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20	0.20	0.10	
SB-1, 10 feet		4.2	ND	ND	ND	ND	ND	ND	ND	0.15	3.3	ND	ND	0.23	ND	ND	ND	ND	ND	ND	0.28	ND	ND	ND	ND	ND	0.82	ND	ND	ND	1.6	55.6
SB-1, 15 feet		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.9
SB-1, 20 feet		0.16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5
SB-1, 25 feet		5.2	ND	ND	ND	ND	ND	ND	ND	0.2	5.3	ND	0.15	0.33	0.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	ND	ND	ND	1.7	50.5
SB-1, 30 feet		5.3	ND	ND	ND	ND	ND	ND	ND	ND	1.0	0.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.42	36.1
SB-2, 10 feet		2.5	ND	ND	0.14	ND	ND	ND	ND	0.21	1.1	ND	ND	0.13	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	ND	ND	ND	ND	3.9	1.0	63.4
SB-2, 15 feet		1.5	ND	ND	ND	ND	ND	ND	ND	0.11	0.85	ND	0.12	ND	ND	ND	ND	ND	ND	ND	0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.71	37.0
SB-2, 20 feet		2.0	ND	ND	0.32	ND	ND	ND	ND	0.10	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.56	55.8
SB-2, 25 feet		2.6	ND	ND	0.31	ND	ND	ND	ND	0.16	0.62	ND	0.34	ND	ND	ND	ND	ND	ND	ND	0.36	ND	ND	ND	ND	ND	0.14	ND	ND	ND	0.69	45.3
SB-2, 30 feet		2.9	ND	ND	0.18	ND	ND	ND	ND	ND	ND	0.34	ND	ND	ND	ND	ND	ND	ND	ND	0.28	ND	ND	ND	ND	ND	0.11	ND	ND	ND	0.44	30.8

*all units in micrograms per liter

URS Corporation
6501 Americas Parkway NE, Ste 900
Albuquerque, NM 87110-5311
(505) 855-7500
(505) 855-7555 fax

Log of Borehole: SB-1

Project No.: 24342219

Project: Ortiz Oark VOC Investigation

Client: City of Santa Fe

Location: Ortiz Park

Project Manager: Clay Kilmer

SUBSURFACE PROFILE				SAMPLE				
Depth (feet)	Symbol	Description	Depth/Elev.	Number	Sample Interval	Recovery	Soil Vapor (ppm, TIVC)	Well Completion Details
		Ground Surface						
0		***landfill soil cover*** Silty gravelly loam, brown, sl moist	0.0					
5		***Trash fill*** plastic, paper, soil, odor	4.0					
10				1			3.2	Boring backfilled with cuttings, in order of drilling
15		***Tesuque Formation*** Sand, silty, hard, light reddish brown, slight odor in upper 10 feet	15.0	2			0.0	
20		30 Ft TD		3			22.8	
25				4			21.9	
30				5			0.2	
35								
40								
45								
50								

Drilled By: Geomechanics SW

Hole Size: 8-inch

Drill Method: HSA

Datum:

Drill Date: 7-17-03

Sheet: 1 of 1

URS Corporation
6501 Americas Parkway NE, Ste 900
Albuquerque, NM 87110-5311
(505) 855-7500
(505) 855-7555 fax

Log of Borehole: SB-2

Project No.: 24342219

Project: Ortiz Oark VOC Investigation

Client: City of Santa Fe

Location: Ortiz Park

Project Manager: Clay Kilmer

SUBSURFACE PROFILE				SAMPLE				
Depth (feet)	Symbol	Description	Depth/Elev.	Number	Sample Interval	Recovery	Soil Vapor (ppm, TIVC)	Well Completion Details
		Ground Surface						
0		***landfill soil cover*** Silty gravelly loam, brown, dry	0.0					
5		***Trash fill*** degraded wood fiber-vegital material, glass, plastic, odor	5.0					
10		***Tesuque Formation*** Sand, coarse, silty. lt brown, sl moist	9.0	1			0.0	Boring backfilled with cuttings, in order of drilling
15		Sand, gravelly (volcanic origin), hard, reddish brown	13.0	2			2.7	
20		Sand, silty, red, hard, sl moist	19.0	3			---	
25		TD: 30 ft		4			---	
30				5			---	
35								
40								
45								
50								

Drilled By: Geomechanics SW

Drill Method: HSA

Drill Date: 7-17-03

Hole Size: 8-inch

Datum:

Sheet: 1 of 1

APPENDIX D

WELL LOGS, HYDROGRAPHS AND SURVEY, ORTIZ PARK AND PASEO DE VISTA LANDFILL WELLS

URS
URS Corporation
6501 Americas Parkway NE Ste 900
Albuquerque New Mexico
505-855-7428

Log of Borehole: Ortiz Park MW-1

Project No.:

Project: Landfill Wells

Client: City of Santa Fe

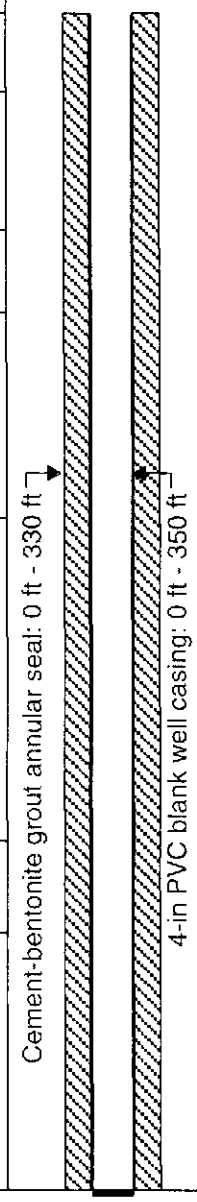
Location: Ortiz Park

Enclosure:

Project Manager: Clay Kilmer

Depth, Feet	Symbol	Description
		Ground Surface
0		Sand, medium grained, silty, gravelly, brown, slightly moist, unconsolidated
20		Sand, medium grained, gravelly, silty, dark brown, semiconsolidated
40		
		Gravel, sandy, silty, brown
60		
		Sand, medium to coarse grained, silty, brown
80		
100		
		Sand, medium grained, silty, brown
120		
140		
160		
180		Sand, medium grained, silty, brown, plastic
200		Sand, medium to coarse grained, silty, brown, plastic
220		
240		

Well Completion Details



Drilled By: HGS Drilling, ABQ, NM

Drill Method: Mud Rotary

Drill Date: 4-21-04

Hole Size: 7 7/8-inch

Datum:

Sheet: 1 of 2

URS Corporation
6501 Americas Parkway NE Ste 900
Albuquerque New Mexico
505-855-7428

Project No.:

Project: Landfill Wells

Client: City of Santa Fe

Location: Ortiz Park

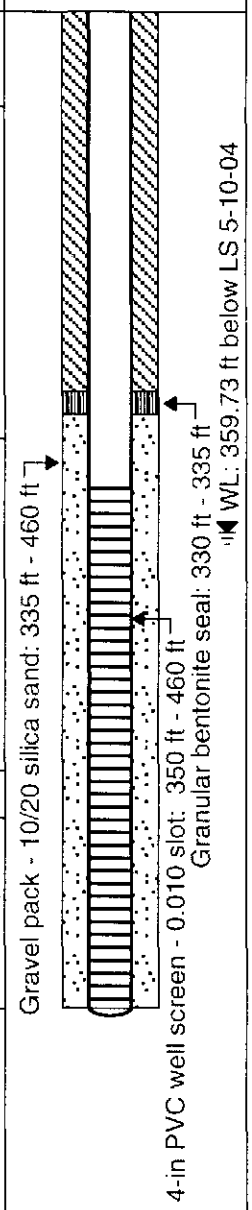
Log of Borehole: Ortiz Park MW-1

Enclosure:

Project Manager: Clay Kilmer

Depth, Feet	Symbol	Description
270		Sand, medium grained, slightly silty, brown
290		
310		
330		
350		Sand, medium grained, silty, brown
370		
390		
410		Sand, gravelly, cobbly, silty, brown
430		Sand, gravelly, silty, brown
450		
470		
490		

Well Completion Details



Drilled By: HGS Drilling, ABQ, NM

Drill Method: Mud Rotary

Drill Date: 4-21-04

Hole Size: 7 7/8-inch

Datum:

Sheet: 2 of 2

Client: CITY OF SANTA FE Job No.: 1257-117-RT-BORF Date Drilled: 3/26-4/5/93 Boring No.: SB-9 (MW-1)

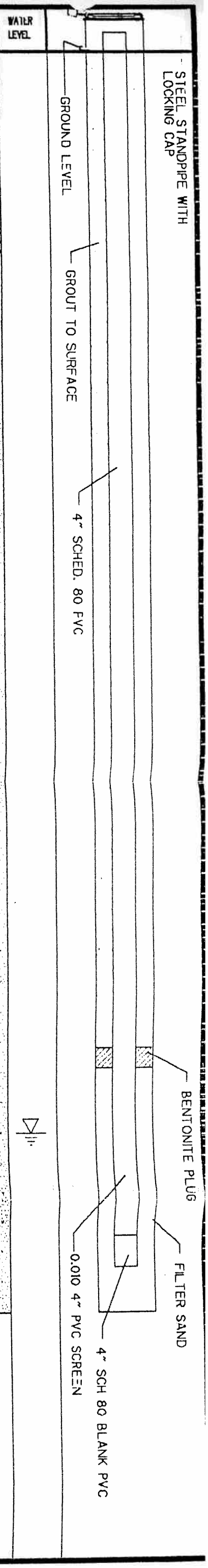
Site: ADJACENT TO FRANK ORTIZ PARK

Total Depth: 390' Casing Type & Size: 4" SCH 80 PVC Slot Size: 0.010 Drilling Method: HSA AND AIR ROTARY Top of Casing Elevation: N/A

Comments: AUGER REFUSAL @ 72'

Driller: BEYLIK DRILLING INC. Logged by: C. T. IRWIN

DEPTH, FT.	SYMBOL (USCS)	SAMPLE DESCRIPTION	SAMPLE NO.	SAMPLING TOOL	MOISTURE	DEPTH	BLOW COUNT
0–10	SP	0-8.5' SAND, poorly sorted, poorly graded, fine to medium grained, moist, brown	9-1	SS	D	5-7'	11/46
	SC		9-2	SS	D	13.5-15'	15/50 5 1/2"
10–20	SW	8.5-13.5' SAND, clayey, poorly graded, medium to coarse grained, dry, light brown, with < 10 % gravel	9-3	SS	D	18.5-20'	50-3"/50-1"
	SP					30-32'	50-4"/50-2"
20–30	SP	13.5-18.5' SAND, well graded, medium grained, dry, brown				40-42'	50-2"/50-1"
30–40		18.5-23.5' SAND, poorly sorted, poorly graded, medium to coarse grained, dry, brown, with 10% gravel				50-52'	50-5"/50-3"
40–50	CL		9-4	SS	D	57-58.5'	50-1"/50-1"
50–60	SP	23.5-57' SAND, poorly sorted, poorly graded, medium to coarse grained, Arkose, dry, reddish brown, locally with cobbles and gravel				68.5-70'	50-4"/50-3"
60–70		57-62' CLAY, silty, low plasticity, dry, reddish brown					
70–80		62-390' SAND, poorly sorted, poorly graded, medium to coarse grained, Arkose, dry, reddish brown, locally with cobbles and gravel	9-5	SS	M	120-122'	
80–90		146' heavy cobbles					
90–100			9-6	SS	M	160-162'	
100–110		195' heavy gravel					
110–120		215' heavy cobbles					
120–130							
130–140							
140–150							
150–160							
160–170							
170–180							
180–190							
190–200							
200–210							
210–220							
220–230							
230–240							
240–250							
250–260							
260–270							
270–280							
280–290							
290–300							
300–310							
310–320							
320–330							
330–340							
340–350							
350–360							
360–370							
370–380							
380–390							
390–400							
400–410							
410–420							
420–430							
430–440							
440–450							
450–460							



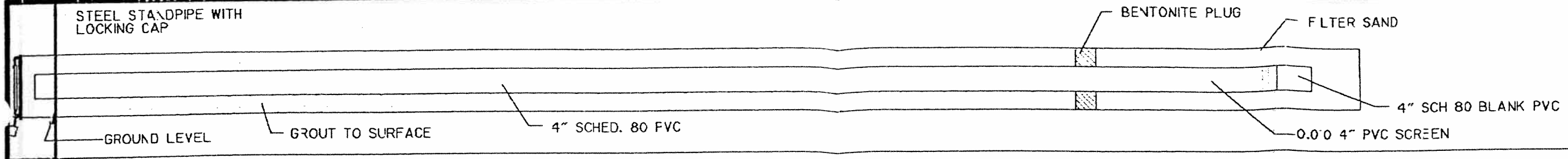
STRATIGRAPHY

WATER LEVEL

SOIL BORING AND MONITOR WELL COMPLETION DETAILS MW-1

CDM CAMP DRESSER & MCKEE INC. ALBUQUERQUE NEW MEXICO environmental engineers, scientists planners, & management consultants

CITY OF SANTA FE
SANTA FE LANDFILL
SANTA FE, NEW MEXICO



DEPTH, FT.	SYMBOL (USCS)	SAMPLE DESCRIPTION	SAMPLE NO.	SAMPLING TOOL	MOISTURE	DEPTH	BLOW COUNT
10		0-400' SAND, poorly sorted, poorly graded, fine to coarse grained, Arkose, damp to moist, reddish brown, locally with cobbles and gravel;	7-1	SS	MOIST	2-3.5'	3/6/15
		2-3.5' SC	7-2	SS	DAMP	5-7'	11/29/32/45
20		3.5-4' CL				20-22'	50-2"/50-0"
		4.5-5.0' sandy clay					
30		5-7' caliche on bedding				30-32'	50-3"/50-2"
40						40-42'	50-6"/50-3"
50		48.5 3/4" caliche layer				50-52'	50-6"/50-3"
60							
70							
80	SP						
90							
100			7-3	SS	MOIST	100-102'	
110							
120							
130		129' heavy cobbles					
140							
150		150' heavy cobbles					
160		160-162' clayey with caliche staining	7-4	SS	MOIST	160-162'	
170							
180							
190							
200							
210							
220							
230							
240							
250							
260							
270							
280							
290							
300							
310							
320		320' depth at which water encountered					
330							
340							
350							
360							
370							
380							
390							
400							
410							
420							
430							
440							
450							
460							

Client: CITY OF SANTA FE Job No.: 1257-117-RT-BORF Date Drilled: 3/24-4/15/93 Boring No.: SB-7 (MW-2)

Site: WESTSIDE/NORTH END OF LANDFILL Top of Casing Elevation: N/A

Total Depth: 400' Casing Type & Size: 4" SCH 80 PVC Slot Size: 0.010 Drilling Method: HSA AND AIR ROTARY

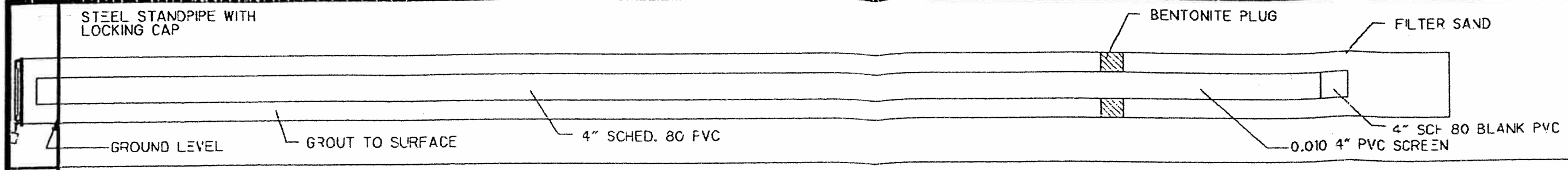
Comments: AUGER REFUSAL @ 52'

Driller: BEYLIK DRILLING INC. Logged by: C. T. IRWIN

SOIL BORING AND MONITOR WELL COMPLETION DETAILS MW-2

CDM CAMP DRESSER & MCKEE INC. ALBUQUERQUE NEW MEXICO environmental engineers, scientists planners, & management consultants

CITY OF SANTA FE SANTA FE LANDFILL SANTA FE, NEW MEXICO



WATER LEVEL

STRATIGRAPHY

DEPTH FT.	BLOW COUNT	DEPTH	MOISTURE	SAMPLING TOOL	SAMPLE NO.	SAMPLE DESCRIPTION	SYMBOL (USCS)
10	8/12/25/42	5–7'	M	SS	8–1	0–3.5' CLAY, sandy, coarse grained, moist, brown, with caliche gravel	CL
						3.5–5' SAND, clayey, coarse grained, moist, brown	SC
20	50–5"/50–3"	20–22'				5–380' SAND, poorly sorted, poorly graded, fine to coarse grained, Arkose, moist, reddish brown, locally with gravel and cobbles	SP
30	50–5"/50–2"	30–32'				5–7' rootlets	
40	50–4"/50–2" 100–1"	40–42' 45–47' 47–48.5'	M M	SS SS	8–2 8–3	8.5–10' tan with caliche	
50	50–4"/50–2"					42' 1" clayey	
						47' 6" clay	
60	50–3"/50–2"	60–62'				50' caliche	
70	50–4"/50–3"	68.5–70'	M	SS	8–4	71' 3" clay	
						72–73' clayey	
80	50–4"/50–3"	80–82'					
90							
100		100–101' 101–102'	M M	SS SS	8–5 8–6	100–101' SC	
110							
120							
130							
140							
150							
160		160–162'	M	SS	8–7	160–162' caliche	
170							
180							
190							
200							
210							
220							
230							
240							
250							
260							
270							
280							
290							
300							
310						313' Depth at which water encountered	
320							
330							
340							
350							
360							
370							
380							
390							
400							
410							
420							
430							
440							
450							
460							

Client: CITY OF SANTA FE Job No.: 1257-117-RT-BORF Date Drilled: 3/24-4/28/93 Boring No.: SB-8 (MW-3)

Site: WEST SIDE/SOUTH END OF LANDFILL Top of Casing Elevation: N/A

Total Depth: 380' Casing Type & Size: 4" SCH 80 PVC Slot Size: 0.010 Drilling Method: HSA AND AIR ROTARY

Comments: AUGER REFUSAL AT 87'

Driller: BEYLIK DRILLING INC. Logged by: C. T. IRWIN

SOIL BORING AND MONITOR WELL COMPLETION DETAILS MW-3

CDM CAMP DRESSER & MCKEE INC. ALBUQUERQUE NEW MEXICO
environmental engineers, scientists planners, & management consultants

CITY OF SANTA FE
SANTA FE LANDFILL
SANTA FE, NEW MEXICO

Client: City of Santa Fe	Project: Land Fill Monitor Wells	hole: MW-4	1 of 1
Site: Santa Fe Land Fill		date: 5/30/98	
		time: 12:00	
Geologist: TWM	Contractor: Beylik	map	
Drill method: Csg Advance	Rig: THD 05		
Notes:			
elevation, ft 7,011.93	land surface:	TOC	

depth, ft	lith		description
0-55			Sand, fine to medium-grained, pink-tan; gravels, minor to .5"; silt, tan, loose
55-100			Same but moist and some clay
100-120			Sand, fine coarse-grained, pink to tan, some gravels to ¾"; silt
120-180			Sand, fine to medium-grained, tan/pink; silt, tan; minor clay
180-220			Same with sand to coarse-grained
220-270			Sand, fine to coarse-grained, pink/tan; silt, tan; clay, low plasticity
270-300			Same with inc. silt and clay
300-330			Sand, medium to coarse-grained; gravels, fine to medium-grained; minor silt
330-360			Same with gravel to ½"
TD			

Client: City of Santa Fe	Project: Landfill Monitor Wells	hole: MW-5	1 of 1
Site: Santa Fe Landfill		date: 6/15/98	
		time: 12:00	
Geologist: TWM	Contractor: Beylik	map	
Drill method: Csg Advance	Rig: THD 05		
Notes:			
elevation, ft 6,990.05	land surface:	TOC	

depth, ft	lith		description
0-30			Sand, fine to medium-grained, well rounded, well sorted, pink/tan
30-40			Sand, fine to coarse-grained, white/pink; gravels to .25"
40-50			Sand, fine to medium-grained, well rounded, well sorted
50-60			Sand, medium to coarse-grained, subangular to subrounded; gravels, medium to .2", pink
60-100			Sand, fine to coarse-grained, tan; some gravels to .2", subrounded; silt, tan
100-130			Same but pink-light tan
130-140			Sand, very fine to coarse-grained, subrounded, well sorted; silt, tan
140-190			Sand, very fine to coarse-grained, subrounded to subangular, minor gravels to .15", minor silt, tan
190-200			Sand, very fine to coarse-grained, white, subrounded to subangular; silt, tan/white
200-220			Sand, fine to coarse-grained, tan; minor silt
220-230			Same but white
230-240			Gravel, medium to .2", angular to subrounded; sand, Sand, fine to coarse-grained, tan
240-270			Sand, very fine to medium-grained, well sorted; silt, tan
270-280			Gravel, fine to coarse-grained, subrounded to subangular; sand, fine to coarse-grained; silt, tan
280-330			Sand, very fine to medium-grained, rounded to subangular; silt, tan; very minor gravels, fine-grained
330-340			Gravels, fine to medium-grained, angular to subrounded, spherical to flat; sand, fine to coarse-grained, tan; silt, tan
340-360			Sand, fine to coarse-grained, tan, subangular to subrounded; silt, tan
TD			

URS Corporation
6501 Americas Parkway NE Ste 900
Albuquerque New Mexico
505-855-7428

Log of Borehole: MW-6

Project No.:

Project: Landfill Wells

Client: City of Santa Fe

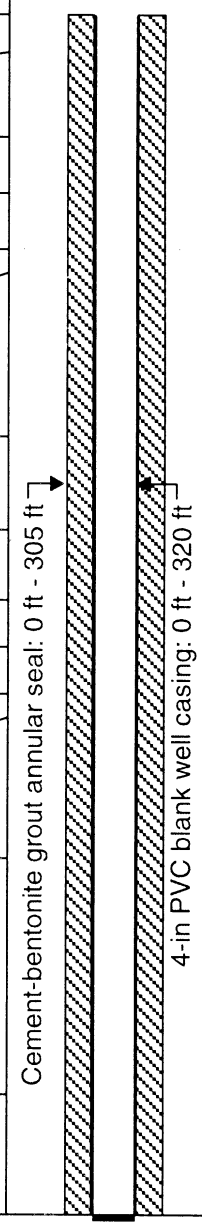
Location: Paseo de Vista

Enclosure:

Project Manager: Clay Kilmer

Depth, Feet	Description
	Ground Surface
0	Soil, silty, sandy, gravelly loam, light brown
	Sand, coarse, silty, gravelly, brown
20	
	Sand, medium grained, silty, plastic, brown
40	Sand, coarse, gravelly, silty, brown
	Sand, coarse grained, slightly silty, friable, brown
60	Sand, coarse grained, gravelly, silty, plastic, brown
80	
	Sand, coarse grained, silty, brown
100	
	Sand, clarse grained, silty, plastic, brown
120	
	Sand, gravelly, cobbly, silty, brown
140	Sand, gravelly, cobbly, brown, very hard drilling
	Sand, silty, gravelly, slightly plastic, brown
160	Sand, gravelly, cobbly, brown, hard drilling
180	Sand, medium grained, slightly silty, brown
200	
220	
240	Sand, medium grained, silty, gravelly, brown

Well Completion Details



Drilled By: HGS Drilling, ABQ, NM

Drill Method: Mud Rotary

Drill Date: 4-29-04

Hole Size: 7 7/8-inch

Datum:

Sheet: 1 of 2

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Albuquerque New Mexico
505-855-7428

Log of Borehole: MW-6

Project No.:

Project: Landfill Wells

Client: City of Santa Fe

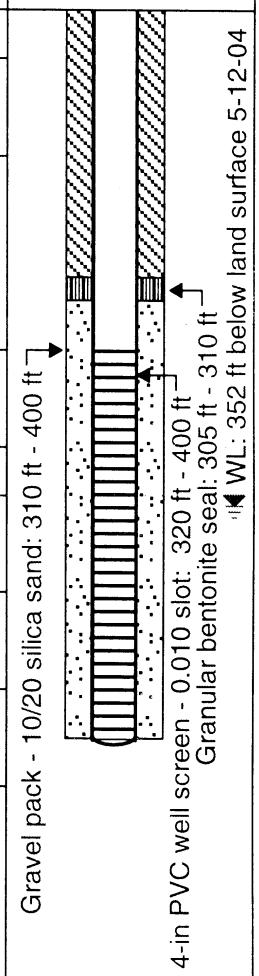
Location: Paseo de Vista

Enclosure:

Project Manager: Clay Kilmer

Depth, Feet	Symbol	Description
270		Sand, medium grained, slightly silty, plastic, brown
290		Sand, medium grained, slightly silty, brown
310		
330		Sand, coarse grained, gravelly, silty, brown
350		Sand, fine to medium grained, silty, slightly plastic, brown
370		Sand, medium to coarse grained, gravelly, silty, brown
390		Sand, fine to medium grained, silty, slightly plastic, brown
410		Sand, medium grained, silty, minor fine gravel, brown
430		
450		
470		
490		

Well Completion Details



Drilled By: HGS Drilling, ABQ, NM

Drill Method: Mud Rotary

Drill Date: 4-29-04

Hole Size: 7 7/8-inch

Datum:

Sheet: 2 of 2

URS Corporation
6501 Americas Parkway NE Ste 900
Albuquerque New Mexico
505-855-7428

Log of Borehole: MW-7

Project No.:

Project: Landfill Wells

Client: City of Santa Fe

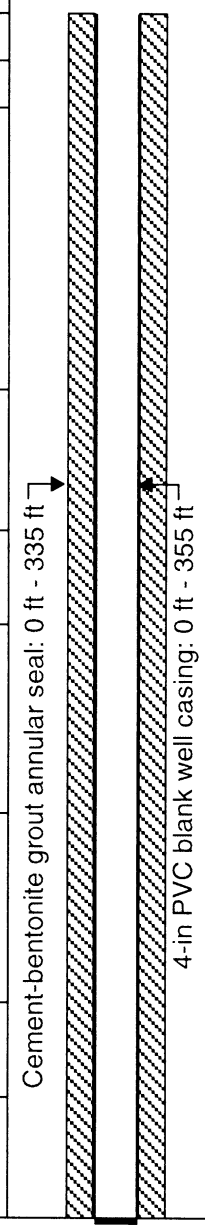
Location: Paseo de Vista

Enclosure:

Project Manager: Clay Kilmer

Depth, Feet	Symbol	Description
		Ground Surface
0		Soil, silty gravelly sandy loam, brown to orange
		Sand, medium grained, gravelly, silty, buff to brown
20		Sand, coarse grained, gravelly, silty, orange to brown
40		
60		
80		Sand, coarse grained, silty, brown
100		
120		Sand, medium coarse grained, well sorted, brown to buff
140		Sand, medium grained, silty, brown
160		
180		Sand, medium to coarse grained, slightly silty, brown
200		
220		Sand, fined grained, silty, brown
240		Silt, sand, medium grained, brown

Well Completion Details



Drilled By: HGS Drilling, ABQ, NM

Drill Method: Mud Rotary

Drill Date: 5-17-04

Hole Size: 7 7/8-inch

Datum:

Sheet: 1 of 2

URS Corporation
6501 Americas Parkway NE Ste 900
Albuquerque New Mexico
505-855-7428

Log of Borehole: MW-7

Project No.:

Project: Landfill Wells

Client: City of Santa Fe

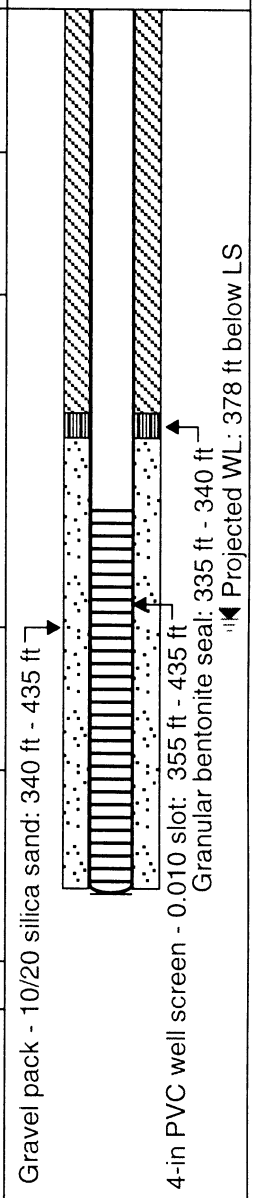
Location: Paseo de Vista

Enclosure:

Project Manager: Clay Kilmer

Depth, Feet	Symbol	Description
270		Sand, fine grained, silty, brown
290		Sand, medium grained, silty, brown
310		Sand, fine grained, silty, brown
330		
350		
370		
390		Sand, fine, silty, slightly plastic, brown
410		Sand, fine, silty, brown to buff
430		
450		
470		
490		

Well Completion Details



Drilled By: HGS Drilling, ABQ, NM

Drill Method: Mud Rotary

Drill Date: 5-17-04

Hole Size: 7 7/8-inch

Datum:

Sheet: 2 of 2

URS Corporation
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Albuquerque New Mexico
505-855-7428

Log of Borehole: MW-8

Project No.:

Project: Landfill Wells

Client: City of Santa Fe

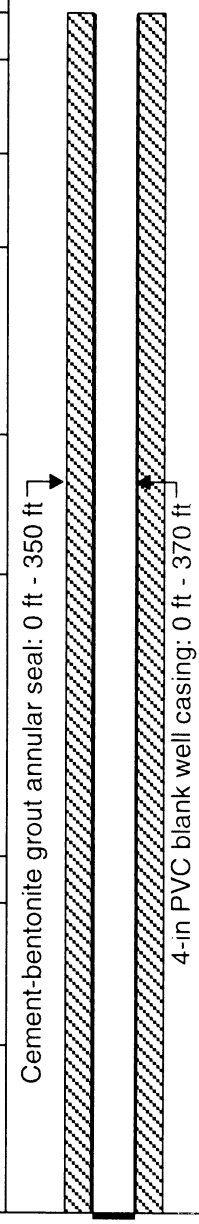
Location: Paseo de Vista

Enclosure:

Project Manager: Clay Kilmer

Depth, Feet	Symbol	Description
		Ground Surface
0		Soil, silty gravelly loam, brown
20		Sand, coarse, silty, gravelly, brown
40		Sand, coarse, well sorted, brown to buff
60		Sand, very coarse, gravelly, brown
80		
100		Sand, medium, silty, brown
120		Sand, fine, silty, slightly plastic, brown
140		
160		
180		Sand, slightly silty, brown
200		Sand, fine grained, silty, buff
220		Sand, coarse, silty, slightly plastic, brown
240		

Well Completion Details



Drilled By: HGS Drilling, ABQ, NM

Drill Method: Mud Rotary

Drill Date: 6-17-04

Hole Size: 7 7/8-inch

Datum:

Sheet: 1 of 2

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URS Corporation
6501 Americas Parkway NE Ste 900
Albuquerque New Mexico
505-855-7428

Log of Borehole: MW-8

Project No.:

Project: Landfill Wells

Client: City of Santa Fe

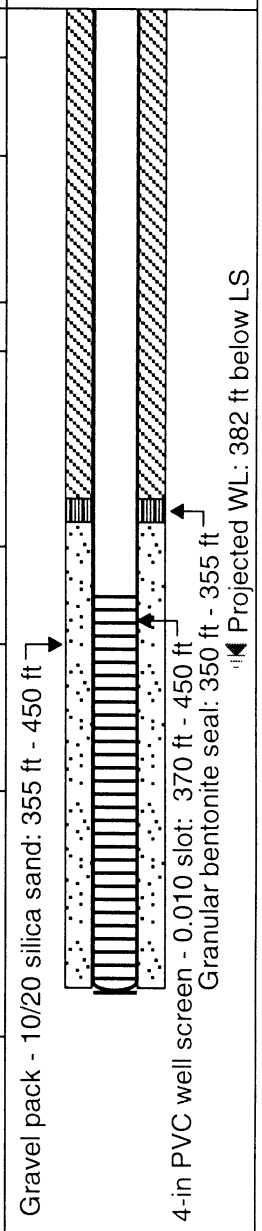
Location: Paseo de Vista

Enclosure:

Project Manager: Clay Kilmer

Depth, Feet	Symbol	Description
270		Sand, silt/clay, plastic, reddish brown
290		Sand, fine, slightly silty, plastic, brown
310		Sand, fine, silty, buff
330		Sand, coarse, silty, gravelly, brown to buff
350		
370		Sand, fine, silty, slightly plastic, brown to buff
390		Sand, fine, silty/clayey, plastic, buff
410		Sand, silty, gravelly, plastic, buff
430		
450		
470		
490		

Well Completion Details



Drilled By: HGS Drilling, ABQ, NM

Drill Method: Mud Rotary

Drill Date: 6-17-04

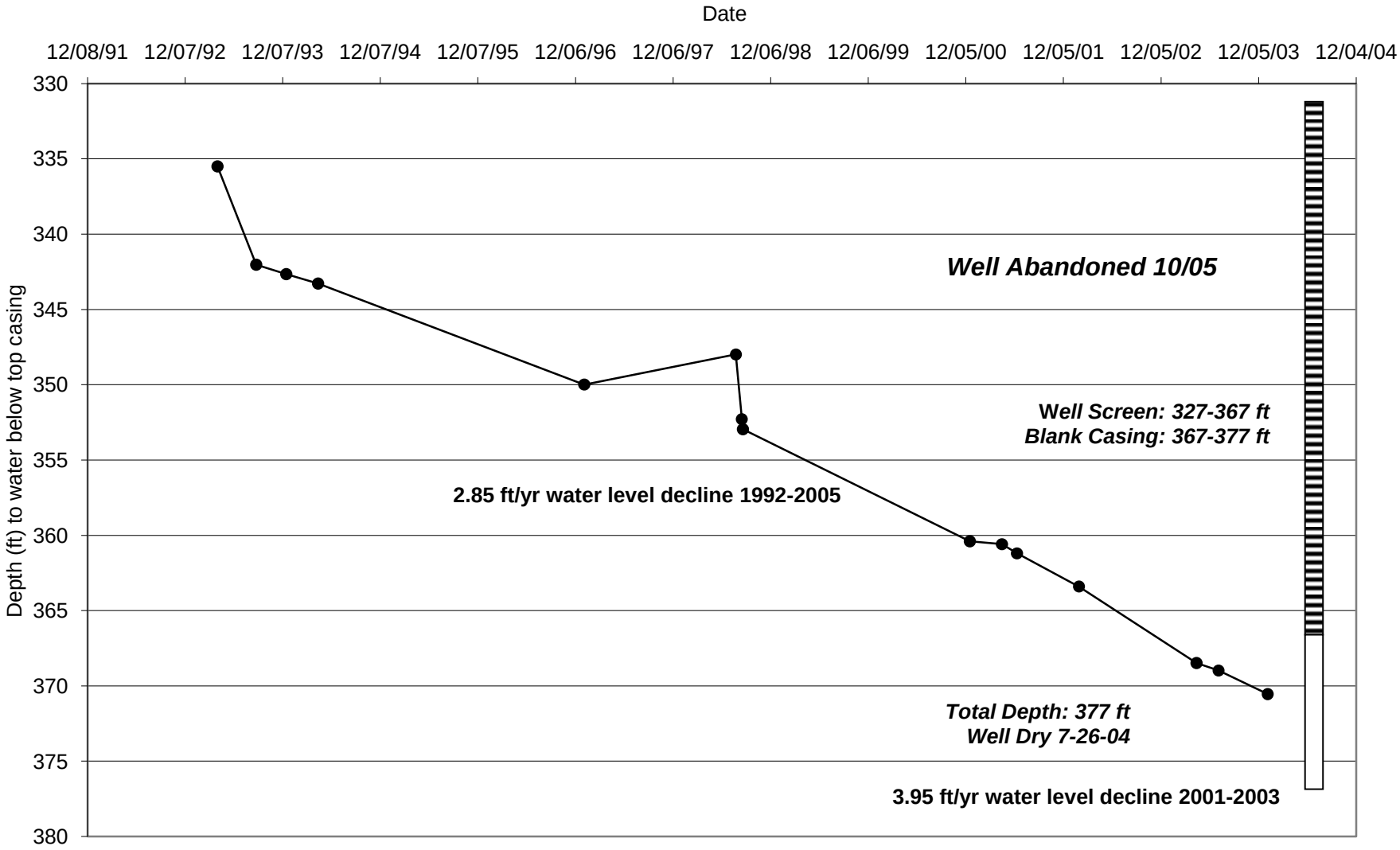
Hole Size: 7 7/8-inch

Datum:

Sheet: 2 of 2

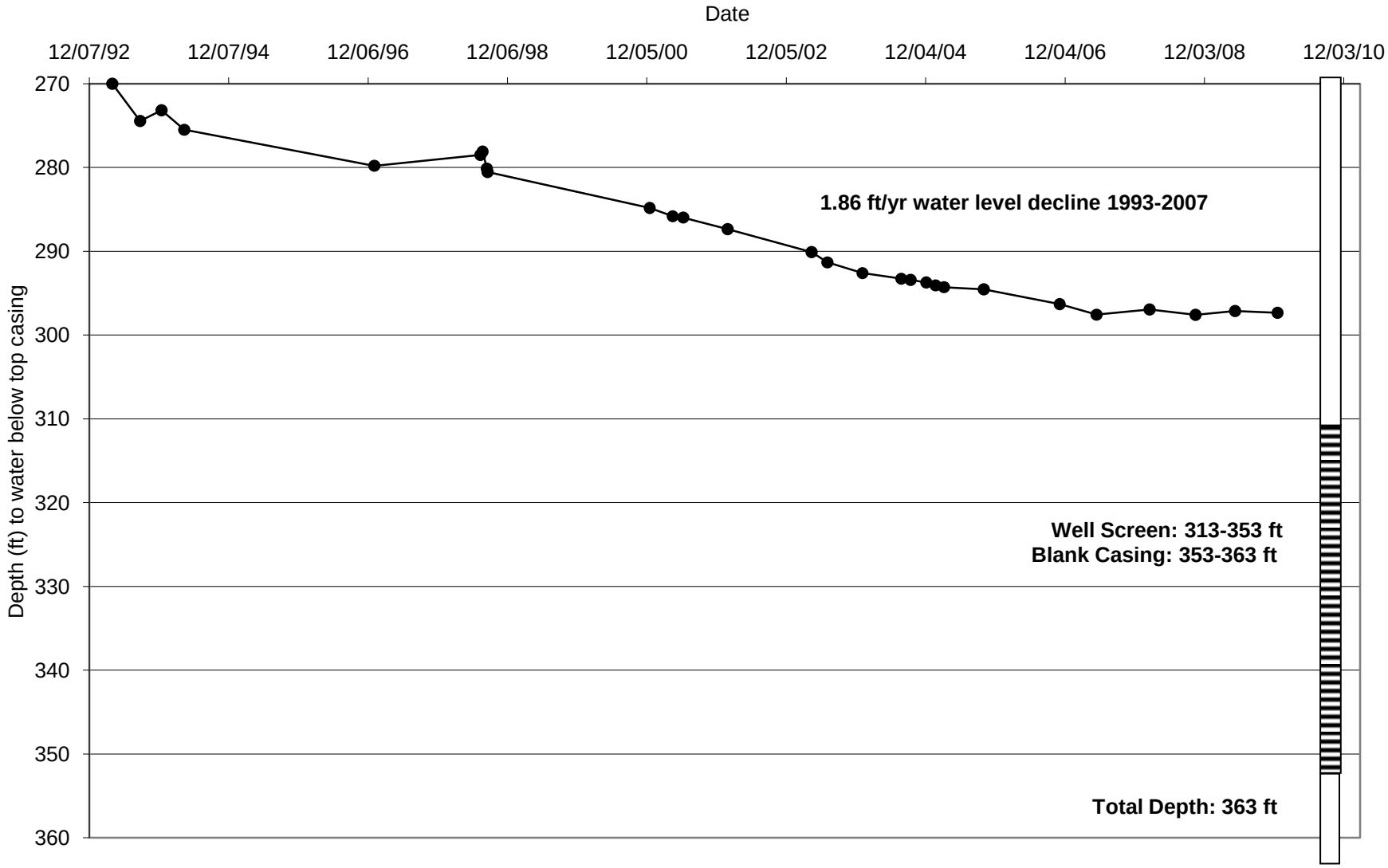
Hydrograph, Ortiz Park MW-1

HYDROGRAPH, PASEO DE VISTA LANDFILL MW-1



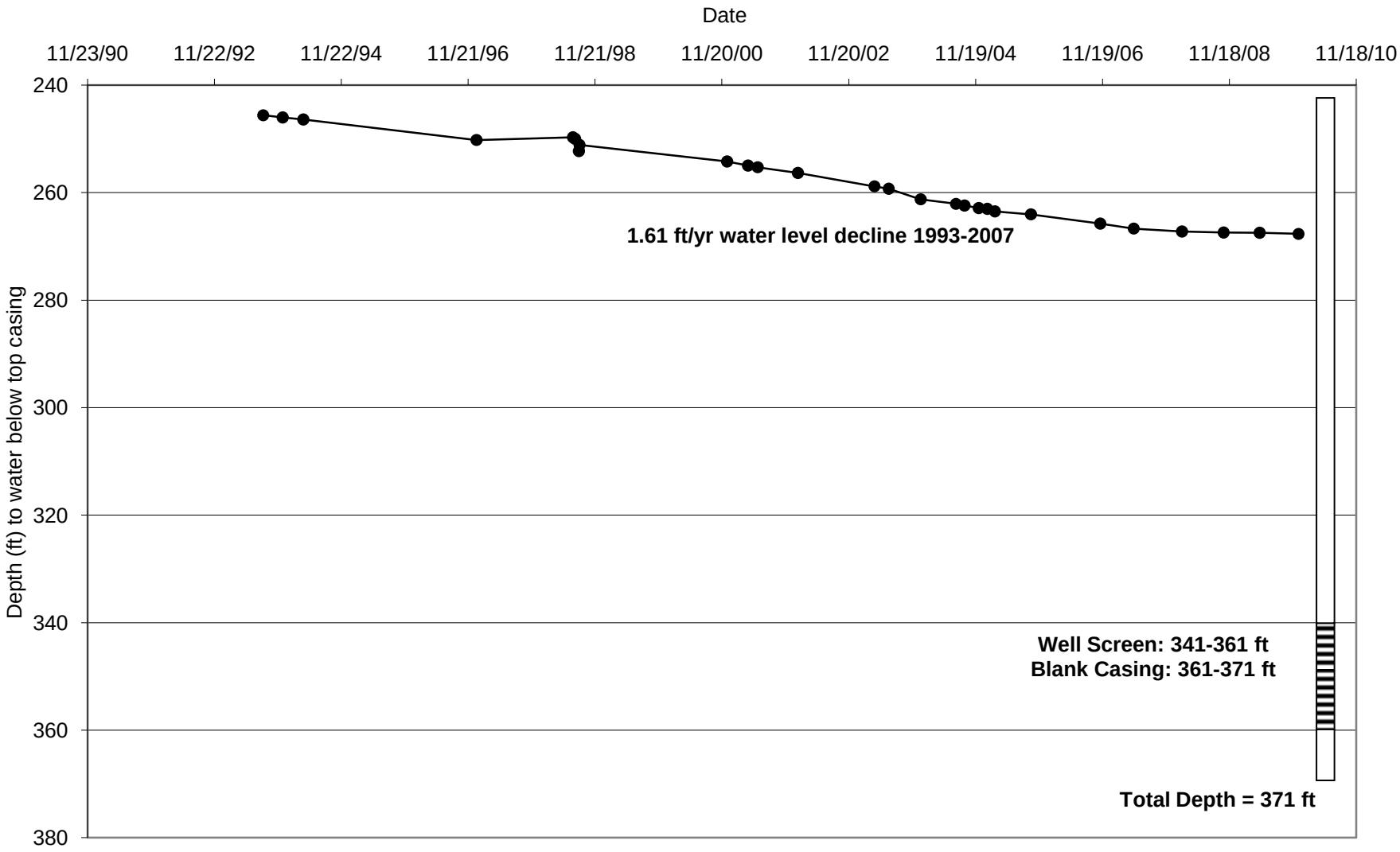
Golder Associates

HYDROGRAPH, PASEO DE VISTA LANDFILL MW-2



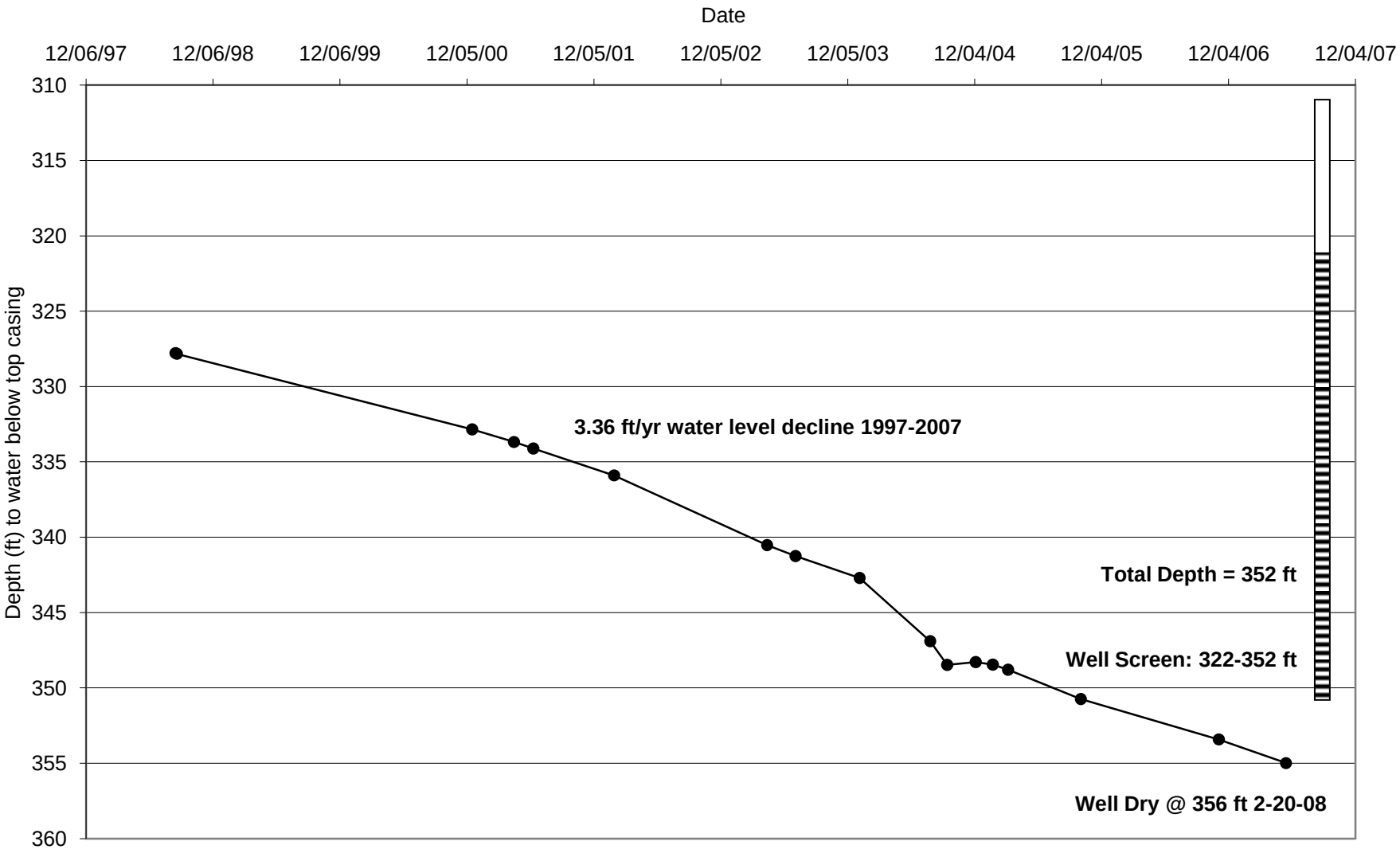
Golder Associates

HYDROGRAPH, PASEO DE VISTA LANDFILL MW-3



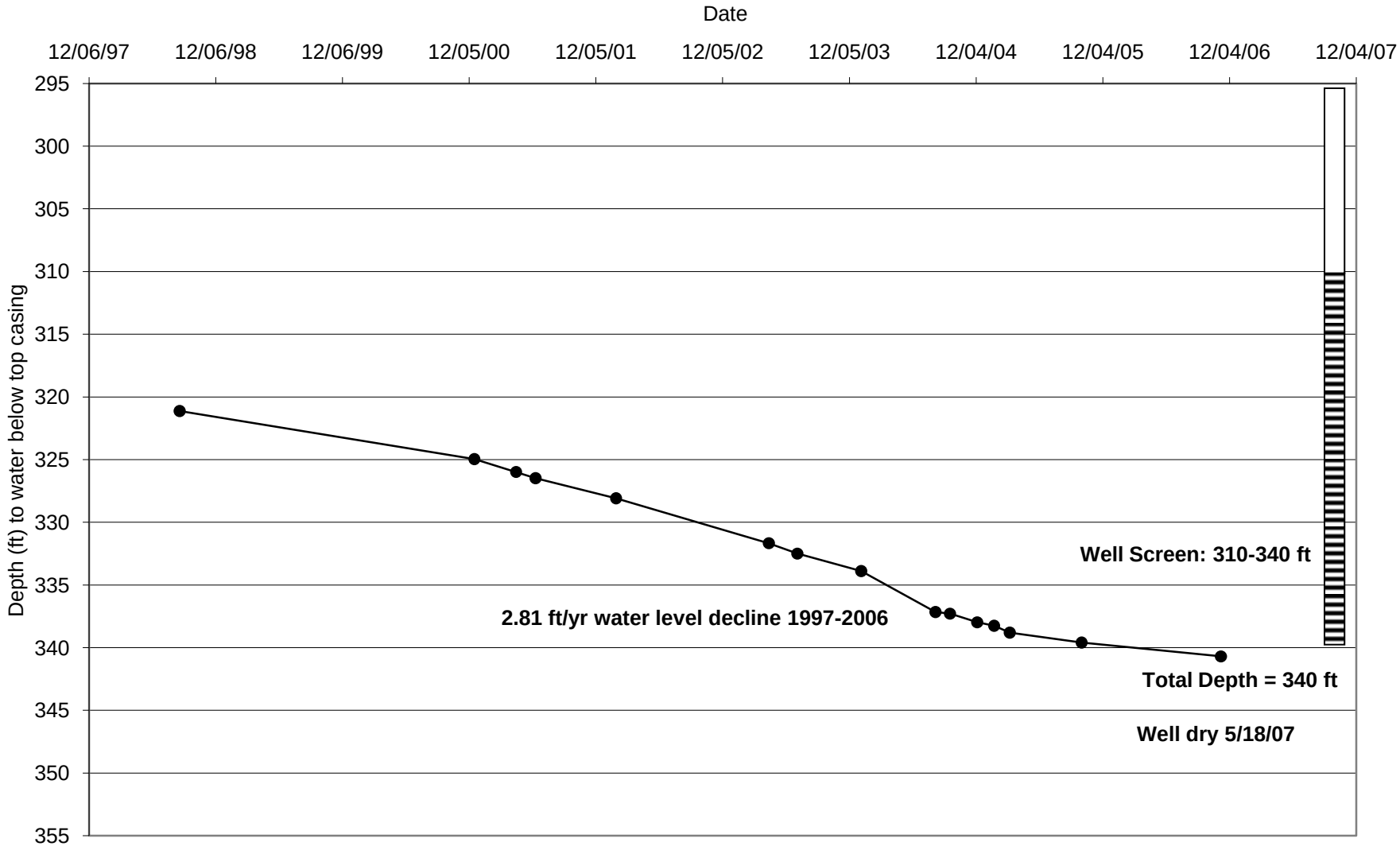
Golder Associates

HYDROGRAPH, PASEO DE VISTA LANDFILL MW-4



Golder Associates

HYDROGRAPH, PASEO DE VISTA LANDFILL MW-5



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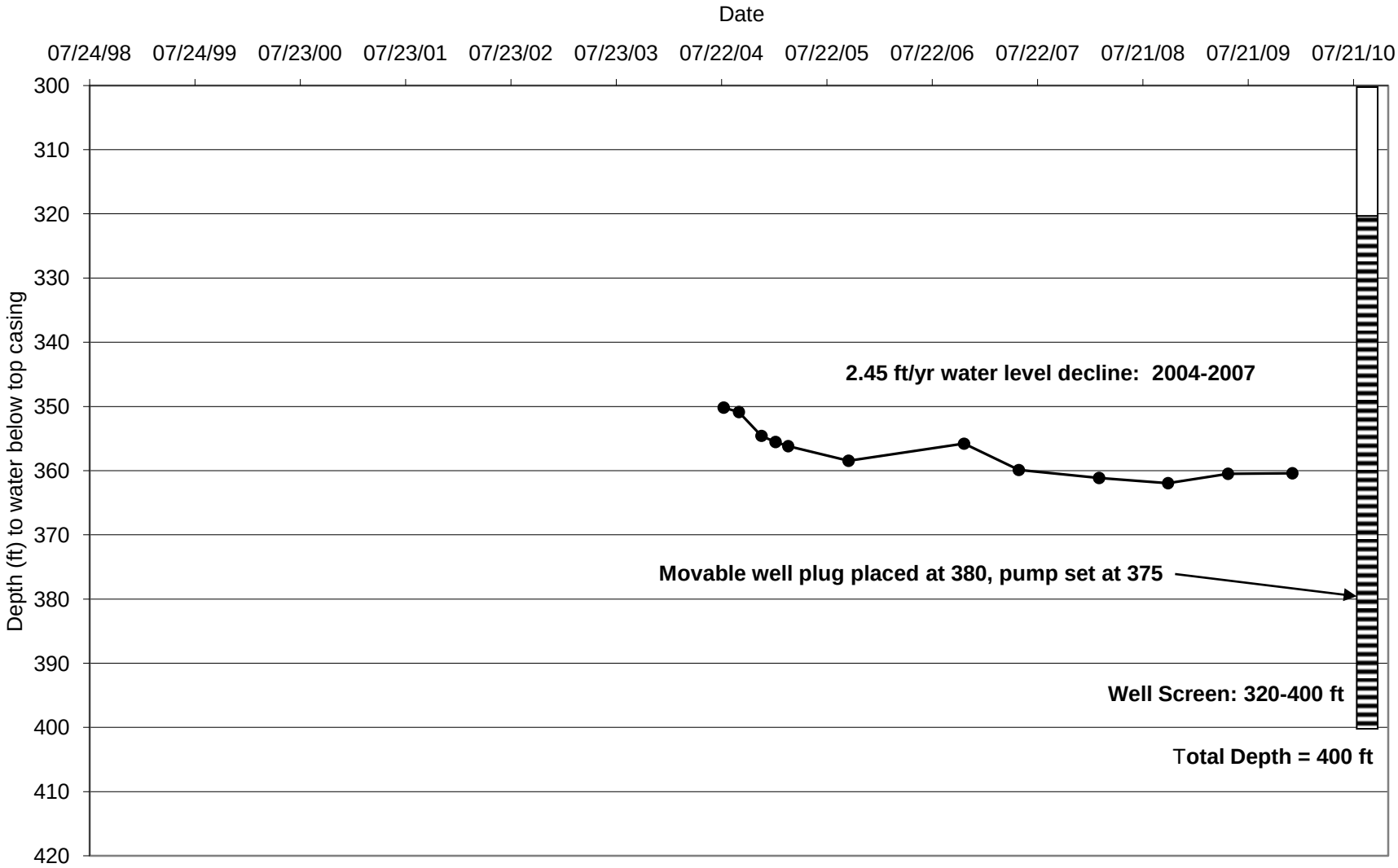
HYDROGRAPH, PASEO DE VISTA LANDFILL MW-6



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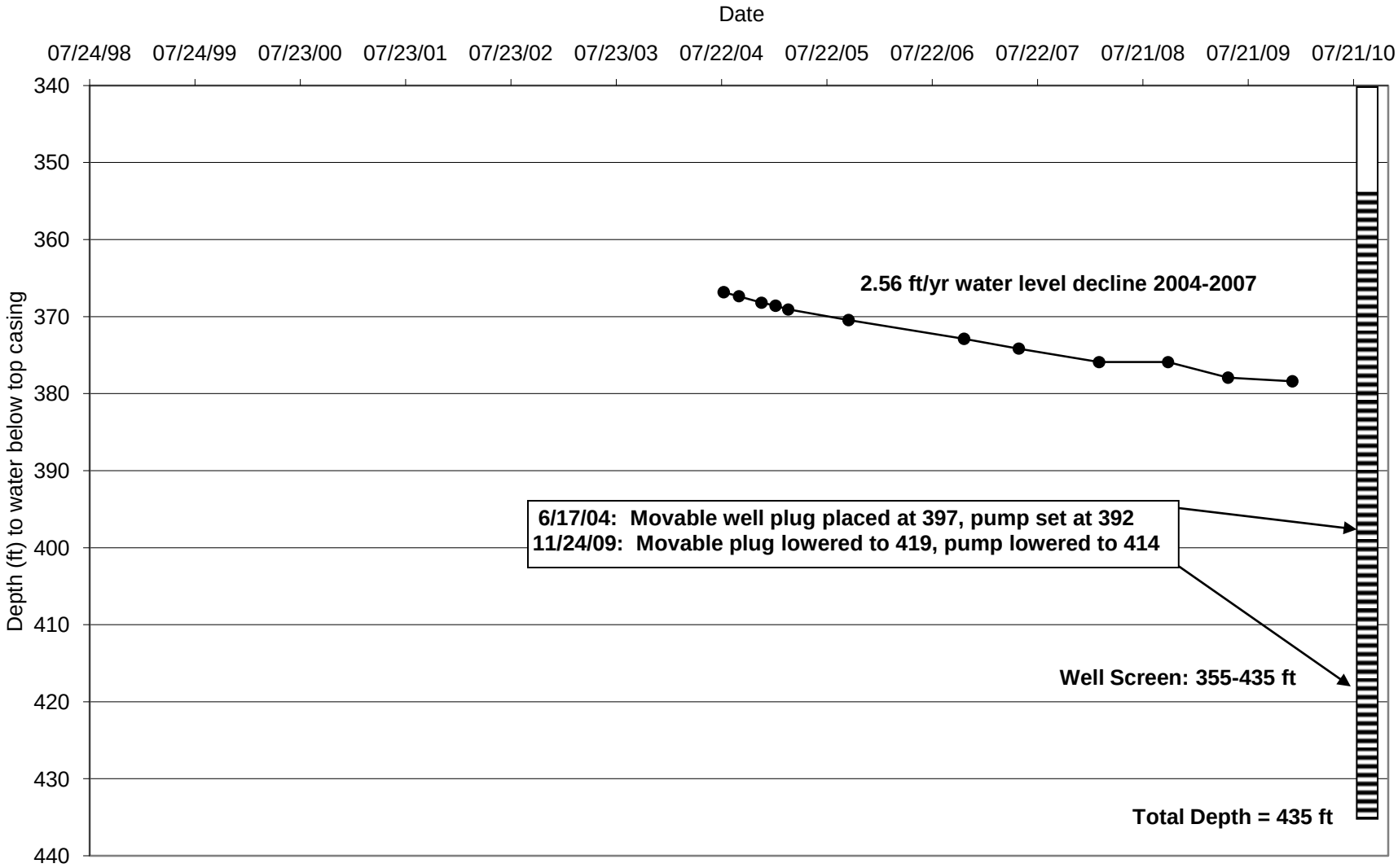
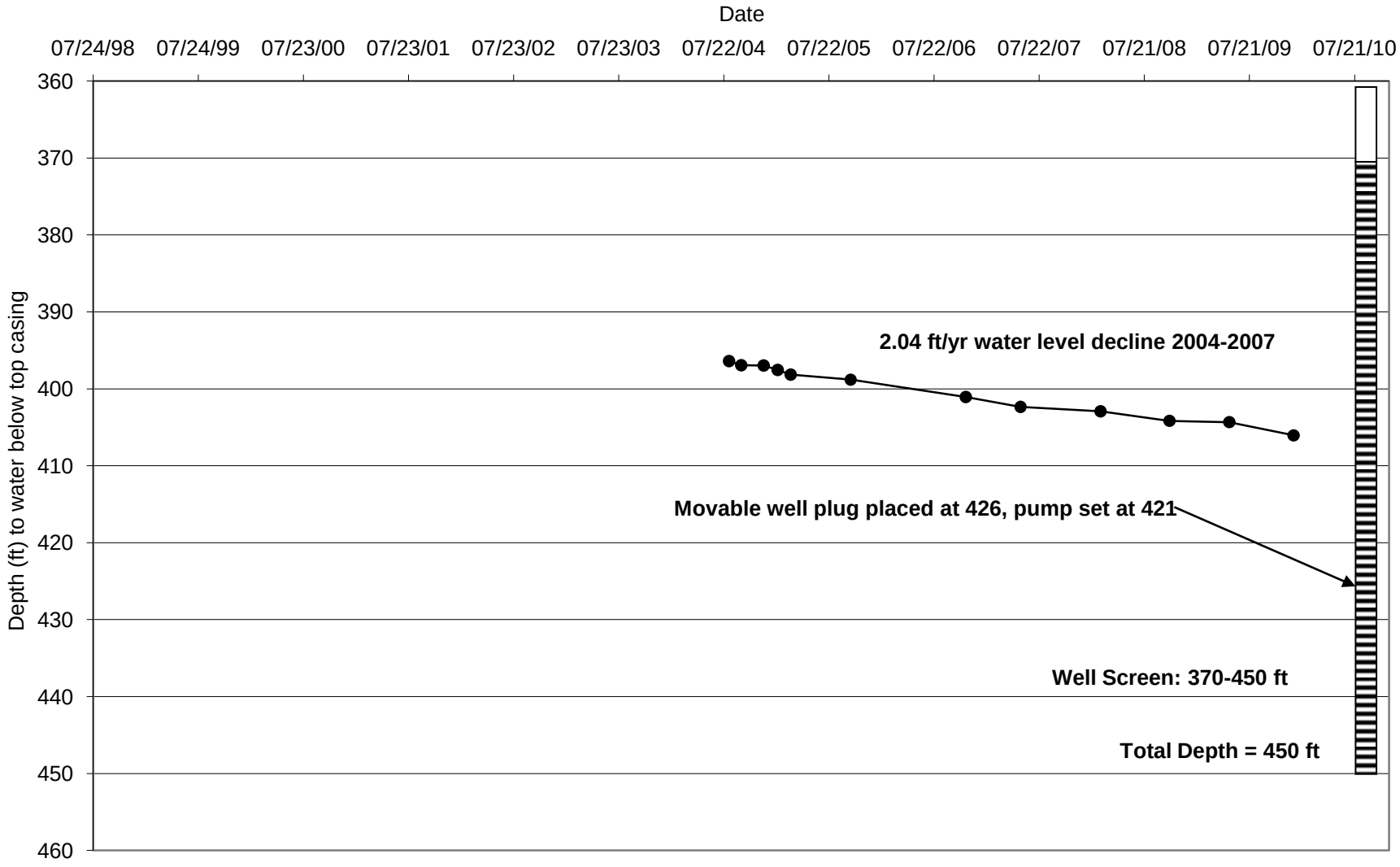
HYDROGRAPH, PASEO DE VISTA LANDFILL MW-7



HYDROGRAPH, PASEO DE VISTA LANDFILL MW-8



Golder Associates

LANDMARK SURVEYS

JAMES J. MEDRANO
N.M.P.S. NO. 5217

1209 B Parkway Drive
Santa Fe, NM 87507
Phone: (505) 473 – 1511
Fax: (505) 473 – 0964
P.O. Box 6714
Santa Fe, NM 87502

Clay Kilmer
URS CORPORATION
6501 Americas Parkway, NE
Suite 900
Albuquerque, NM 87110-5311

Re: Coordinates & Elevations for 9 monitor well sites at the Santa Fe Landfill Site.

Dear Clay,

With respect to the above referenced project, the following are the coordinates and elevations for the monitor wells referenced above. The coordinates listed below are New Mexico State Plane Coordinates on Central Zone, NAD 83, and are to the edge of the rim on the wells (location stamped on lids). The elevations listed below to the top of the lid of the 4" steel pipe. The elevation is referred to sea level, NAVD 88. The values below are expressed in US Survey Feet.

Point	Northing	Easting	Elevation	Description
100	1707862.8420	1721201.5110	6931.63	WELL NO.3
101	1710152.7880	1723087.7570	7014.28	TOP WELL NO.4
102	1706324.7680	1721909.4230	7016.69	TOP WELL NO.6
103	1706920.3180	1722528.9630	6990.09	TOP WELL NO.5
104	1708614.5690	1723288.4200	7028.72	TOP WELL NO.7
105	1709757.6860	1724314.6340	7048.17	TOP WELL NO.8
106	1709226.7260	1724710.4720	7025.16	TOP WELL NO.1
107	1707656.1520	1724467.4490	6999.20	TOP WELL "ORITZ-1"
108	1708780.1090	1721966.7270	6955.87	TOP WELL NO.2

If you have any questions or need any additional information, please do not hesitate to call.

Sincerely,

James J. Medrano

James J. Medrano, PS

REGISTERED LAND SURVEYOR
STATE OF
No.
5217
NEW MEXICO
JAMES J. MEDRANO

APPENDIX E

2003 SAMPLING AND ANALYSIS PLAN, ORTIZ PARK AND PASEO DE VISTA LANDFILL WELLS

June 23, 2004

Mr. Dan Fuqua
Hydrologist
New Mexico Environment Department
Solid Waste Bureau
P.O. Box 26110
Santa Fe, New Mexico 87502-6110

Mr. Ray Montes
Geologist
New Mexico Environment Department
Groundwater Quality Bureau
P.O. Box 26110
Santa Fe, New Mexico 87502-6110

RE: Proposed Groundwater Sampling Program, Paseo de Vista Landfill and Ortiz Park Monitor Wells

Dear Messrs. Fuqua and Montes:

Transmitted herewith is a proposed sampling program and schedule for the groundwater monitoring wells at the Paseo de Vista Landfill and the Ortiz Park Landfill. This proposal is based upon our understanding of NMED-SWMR and NMED-GWQB minimum requirements for groundwater monitoring, as well as our discussions with each of you. We understand that baseline monitoring for SWMR requires collection and analyses of samples from the selected wells 4 times during the initial 6 months of evaluation, then once during the ensuing 6 months; samples are to be analyzed according to SWMR Table I analytes. Thereafter, monitoring requirements are based upon observed water quality and assessments during the initial baseline of monitoring. We also understand the NMED-GWQB requests two years of quarterly groundwater monitoring from the newly-installed monitor well at Ortiz Park (MW-6); the initial analysis from this well would be for Table I analytes and subsequent samples would be analyzed for VOC's by EPA Method 8260 and for RCRA-8 toxic metals.

The attached sheet contains a summary schedule and lab analysis for the proposed well monitoring program. Proposed sample dates are timed such that initial sampling is performed upon completion (assumed to be May 20), then additional sampling events are performed such that compliance with NMED-GWQB and NMED-SWB protocols are met.

Analyses of initial samples from MW-2, MW-6, MW-7, MW-8 and MW-9 for NMED-SWMR Table I analytes are proposed. We also propose to collect samples from MW-4 for analyses of nitrogen species, per our discussion. Subsequent sampling and analytical methods are proposed

URS Corporation
6501 Americas Pkwy., Suite 900
Albuquerque, NM 87110
Tel: 505.855-7500
Fax: 505.855-7555

in the attached schedule. Data obtained from sampling all wells will be transmitted to NMED-SWB and to NMED-GWQB.

I hope that information contained in this submittal is adequate to allow proper evaluation of the proposed sampling program for the Paseo de Vista Landfill and the Ortiz Park Landfill. If you have any questions or comments, please do not hesitate to contact me directly. Thank each of you for your efforts in this matter.

Sincerely,
URS CORPORATION

L. Clay Kilmer
Sr. Hydrogeologist

cc: Willian de Grande
Jill Holbert

Attachment : Proposed sampling program

Proposed Sampling Program
City of Santa Fe Paseo de Vista Landfill and Ortiz Park Monitor Well Network
NMED-SWB and NMED-GWQB

Date	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6 Ortiz Pk	MW-7	MW-8	MW-9
7/20/04		Table I				Table I	Table I	Table I	Table I
9/20/04		Table I		N species			Table I	Table I	Table I
11/20/04		Table I				8260/6010	Table I	Table I	Table I
1/19/05		Table I		N species			Table I	Table I	Table I
2/19/05						8260/6010			
3/19/05		Table I		N species			Table I	Table I	Table I
5/19/05						8260/6010			
8/19/05						8260/6010			
11/19/05						8260/6010			
2/19/06						8260/6010			
5/19/06						8260/6010			

**Table I parameters, per NMED-SWMR requirements*

**N species as Nitrate, nitrite and total Kjeldal nitrogen*

**8260/6010: VOC's by 8260 and RCRA 8 toxic metals, per NMED-GWQB request*

APPENDIX F

SUMMARY OF GEOCHEMICAL ANALYSIS PLAN, ORTIZ PARK AND PASEO DE VISTA LANDFILL WELLS

Delivered-To: longmire@cybermesa.com
Date: Fri, 23 Oct 2009 12:56:48 -0600
To: lwa@lwasf.com, abq@lwasf.com, rmgallegos@santafenm.gov,
plongmire@lanl.gov, longmire@cybermesa.com
From: Shelley Longmire <longmire@cybermesa.com>
Subject: Ortiz Park and Surrounding Area
X-pstn-neptune: 0/0/0.00/0
X-pstn-levels: (S:74.87207/99.90000 CV:99.9000 FC:95.5390 LC:95.5390 R:95.9108 P:95.9108 M:97.0282 C:98.6951)
X-pstn-settings: 3 (1.0000:1.0000) s cv gt3 gt2 gt1 r p m c
X-pstn-addresses: from <longmire@cybermesa.com> [455/20]

Lee; Several chemistry plots for the inactive Ortiz Park landfill are attached for your use. A summary of the plots is provided below.

Chloride vs Nitrate Plot

The Vaniman well located on west Alameda (west of Calle Napal) probably represents background for the Ortiz Park and surrounding area, having low concentrations of nitrate(N) and other solutes. Background, however, needs to better defined with more wells in this part of Santa Fe. Monitor wells MW2 and MW-6 are located at the more recent, but inactive landfill at the transfer station off of Buckman Road west of Ortiz Park. The other wells are located in Casa Solana, except for Ortiz Park-1.

I think that there could be two nitrate plumes, one from the old Japanese internment camp, established in the early to mid 1940s (1942-1946), and the Ortiz Park landfill. A nitrate plume associated with the camp is older than contamination associated with Ortiz Park. This based on the varying distributions of NO3 and Cl. Septic tank contamination is characterized by elevated concentrations of both NO3 and Cl (901 Rio Vista).

Nitrate vs Sulfate Plot

Nitrate and SO4 also vary between between the Ortiz Park and Casa Solona with higher concentrations of these two anions occurring in the Casa Solana wells. This may be indicative of an older and larger source of NO3 and SO4 in a separate groundwater plume.

Bromide/Chloride vs Nitrate Plot

Higher NO3 concentrations are associated with lower Br/Cl(1000) ratios suggesting that Cl concentrations are much higher than Br concentrations. The background-Vaniman well has a Cl/Br(1000) ratio of 15. A single groundwater plume that is well mixed should have more uniform Br/Cl ratios and NO3 concentrations.

Nitrate versus Boron Plot

Boron is a trace element in surfactants associated with soaps and detergents that are found in sewage effluents. Again, The Ortiz Park and Casa Solana wells differ considerably, suggesting that two groundwater plumes probably occur in the area.

Nitrate versus Chromium Plot

Chromium forms soluble anions under oxidizing conditions and is mobile in groundwater. Oxidizing groundwater occurs at Ortiz Park and the transfer station, and Casa Solana based on low concentrations of Fe and Mn and elevated concentrations of NO3 and SO4. There is a distinct possibility that Cr contamination occurs at Ortiz Park and Casa Solana area.

Calcium and TDS versus Bicarbonate Plot

Concentrations of TDS vary in this part of Santa Fe with groundwater being characterized by Ca-HCO3 type composition. Increasing concentrations of TDS are an indicator of groundwater contamination.

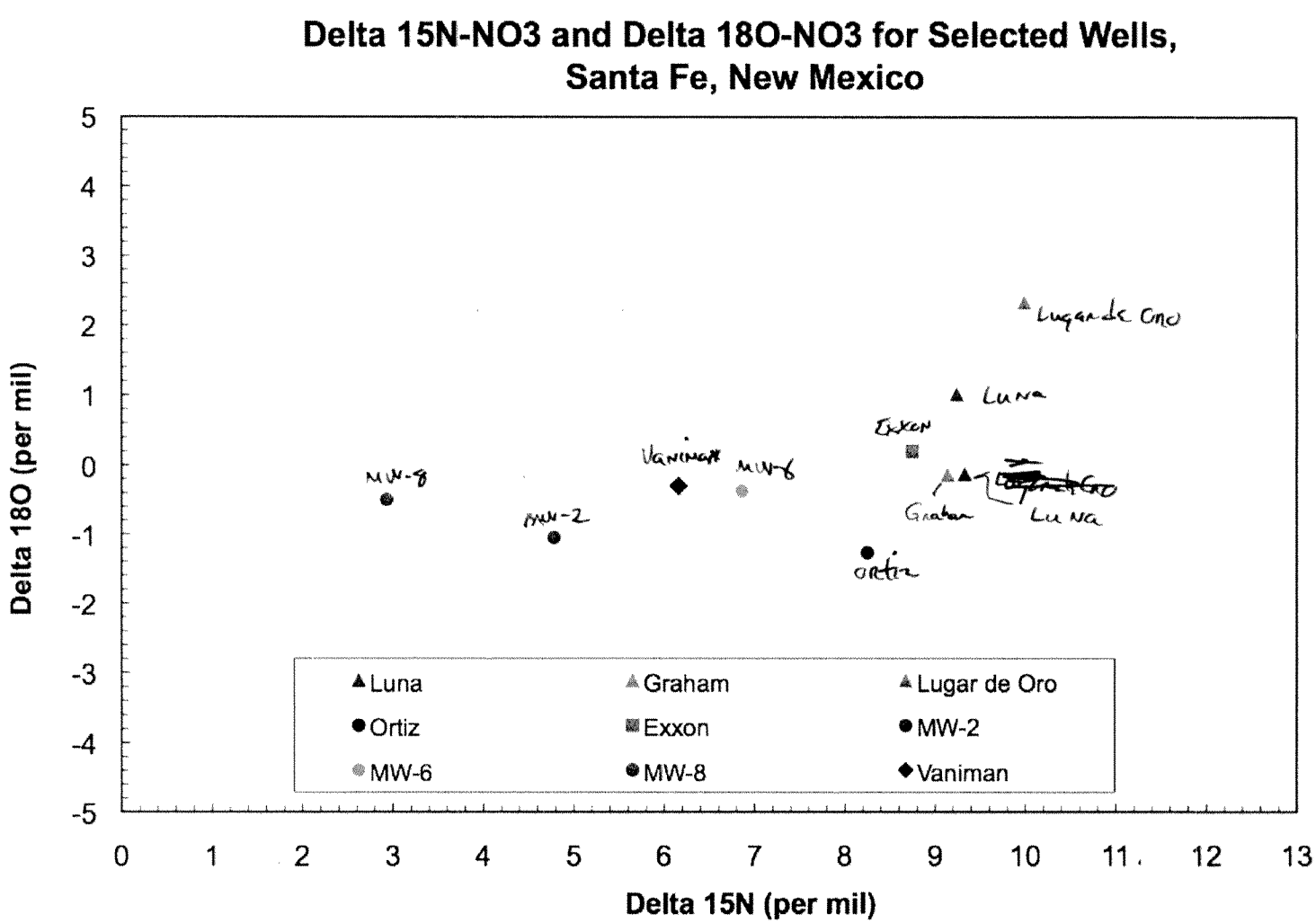
Delta 15-N-NO3 versus Delta 18-O-NO3 Plot

Isotopic analyses of 15-nitrogen and 18-oxygen in nitrate show that most of the elevated concentrations of NO3 are derived from sewage effluent and not fertilizer in the Ortiz Park-Casa Solana area. A mixing line between background at Los Alamos and treated sewage effluent is shown on this figure. Background Delta 15-N-NO3 and 18-O in NO3 needs to be better defined in Santa Fe.

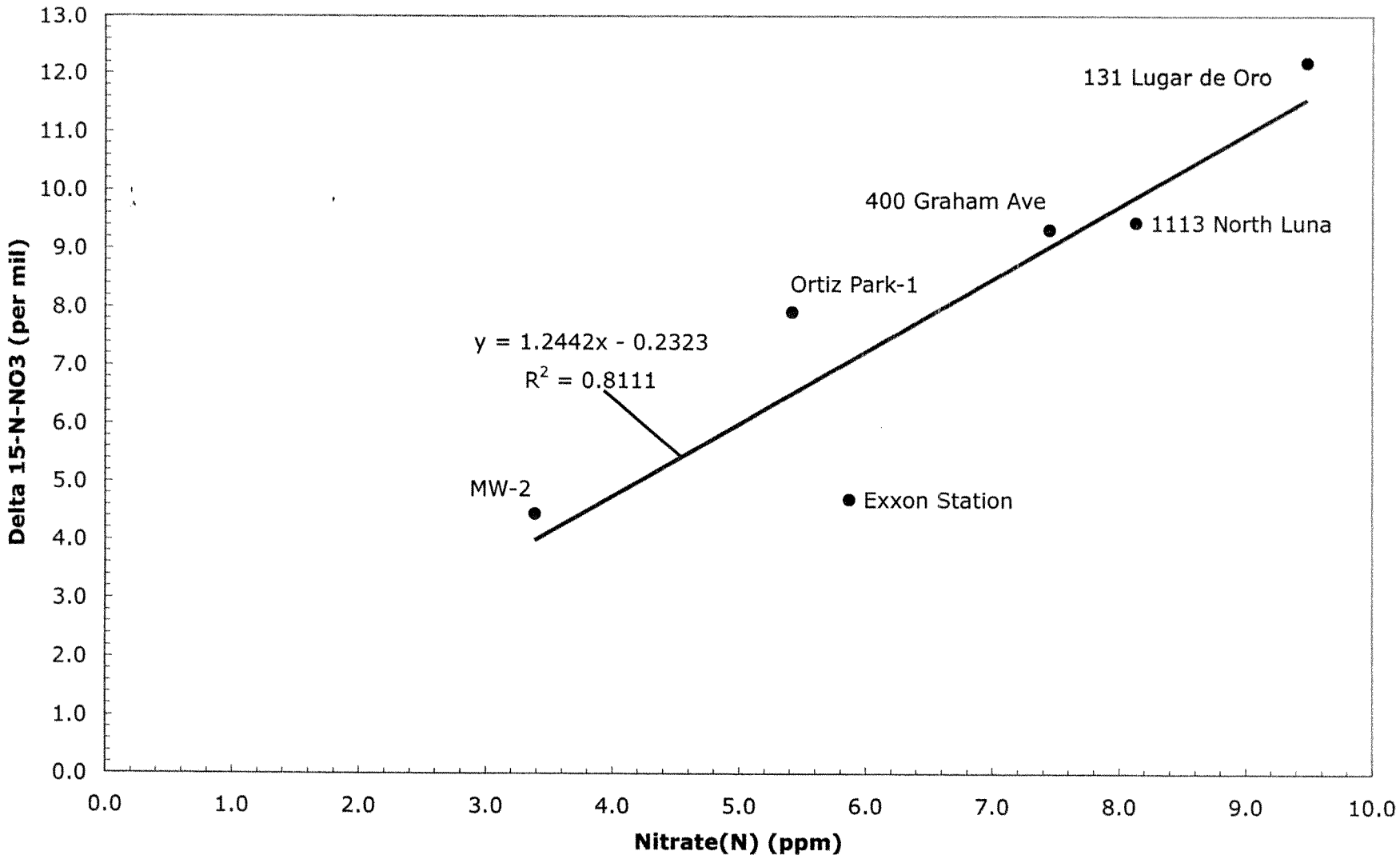
I recommend that more groundwater samples are collected in the study area and analyzed for major ions, trace metals, isotopes of oxygen, hydrogen, nitrogen, and carbon, low-level tritium, VOC and SVOC constituents. I am available for meetings.

Thanks, Pat.

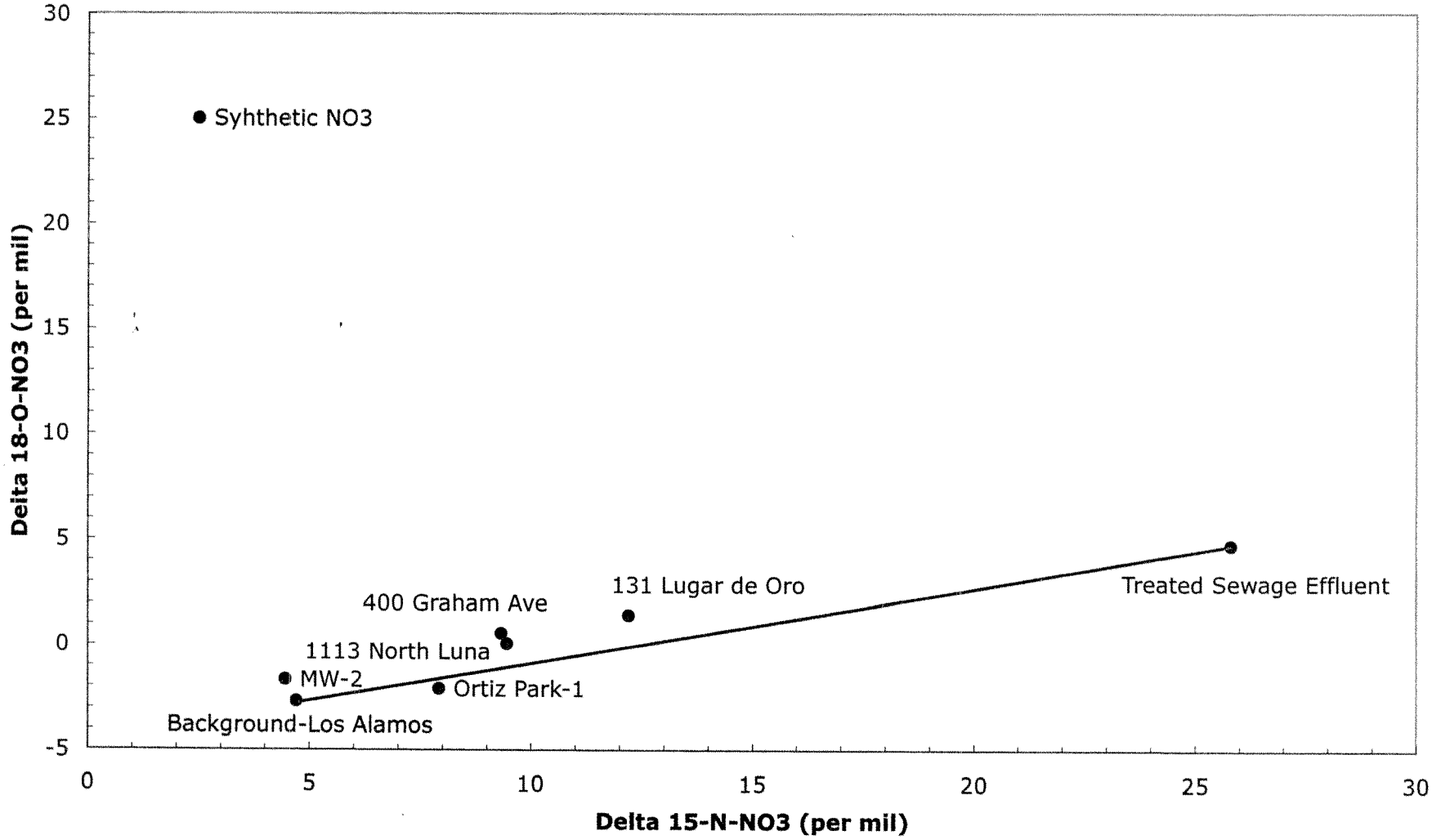
Ortiz Park Landfill.xls


Delta 15N-NO3 and Delta 18O-NO3 for Selected Wells,
Santa Fe, New Mexico
Delta 18O (per mil)
Delta 15N (per mil)
5
4
3
2
1
0
-1
-2
-3
-4
-5
0
1
2
3
4
5
6
7
8
9
10
11
12
13
Luna
Graham
Lugar de Oro
Ortiz
Exxon
MW-2
MW-6
MW-8
Vaniman
Lugar de Oro
Luna
Exxon
Vaniman
MW-8
MW-6
MW-2
Graham
Luna
Ortiz

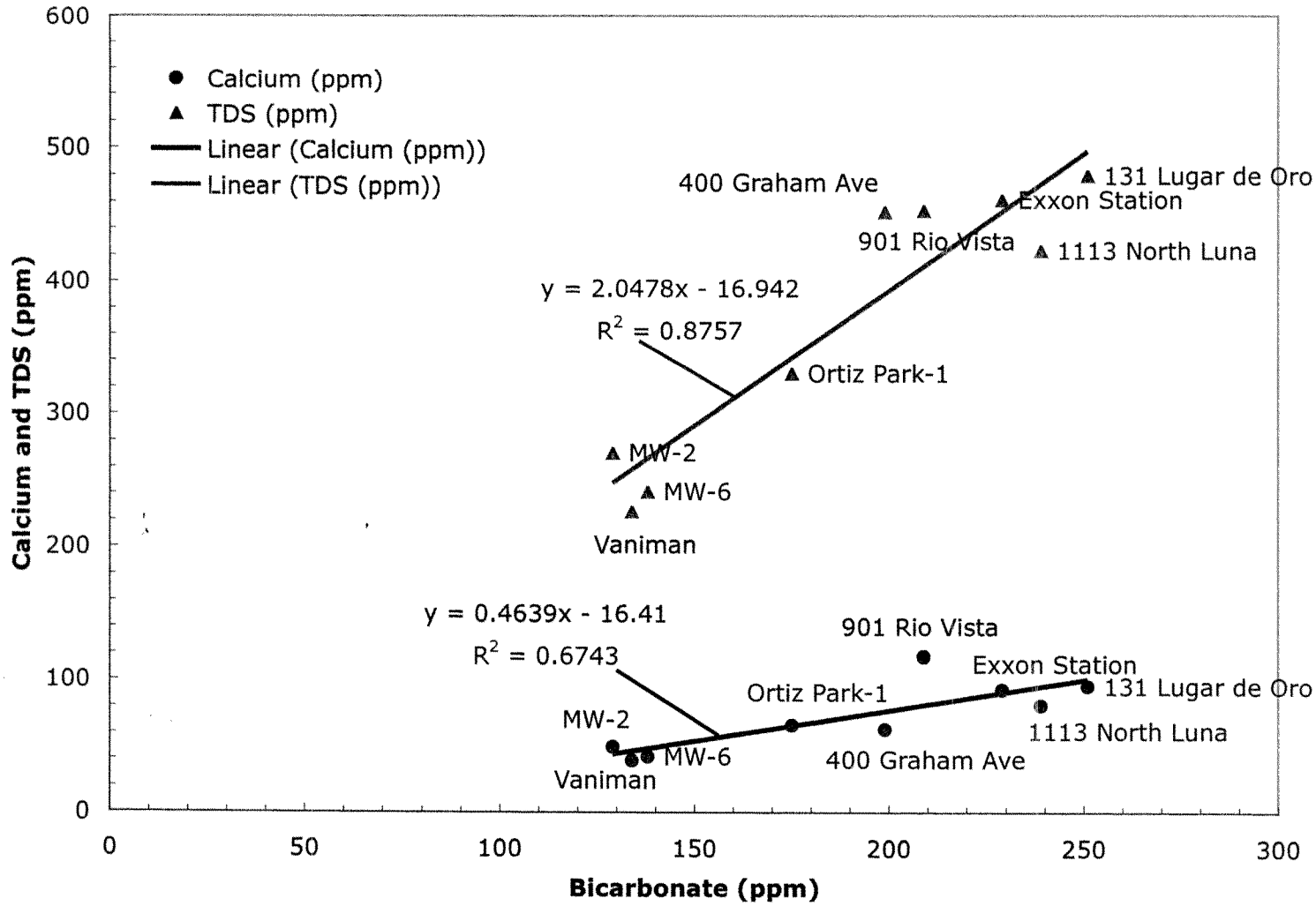
Nitrate(N) Versus Delta 15-N (NO3) at Ortiz Park and Surrounding Areas



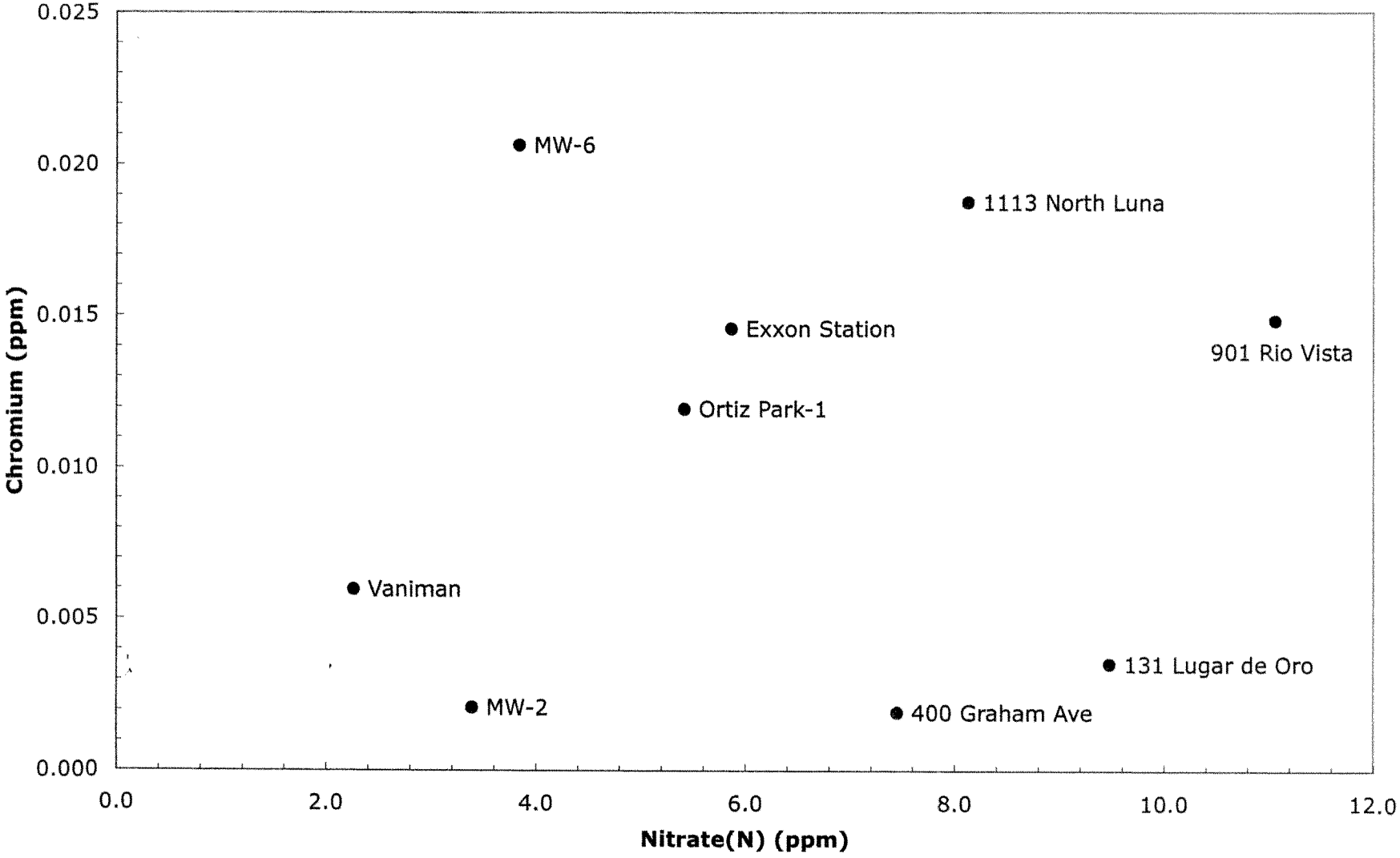
Delta 15-N (NO3) Versus Delta 18-O (NO3) at Ortiz Park and Surrounding Areas



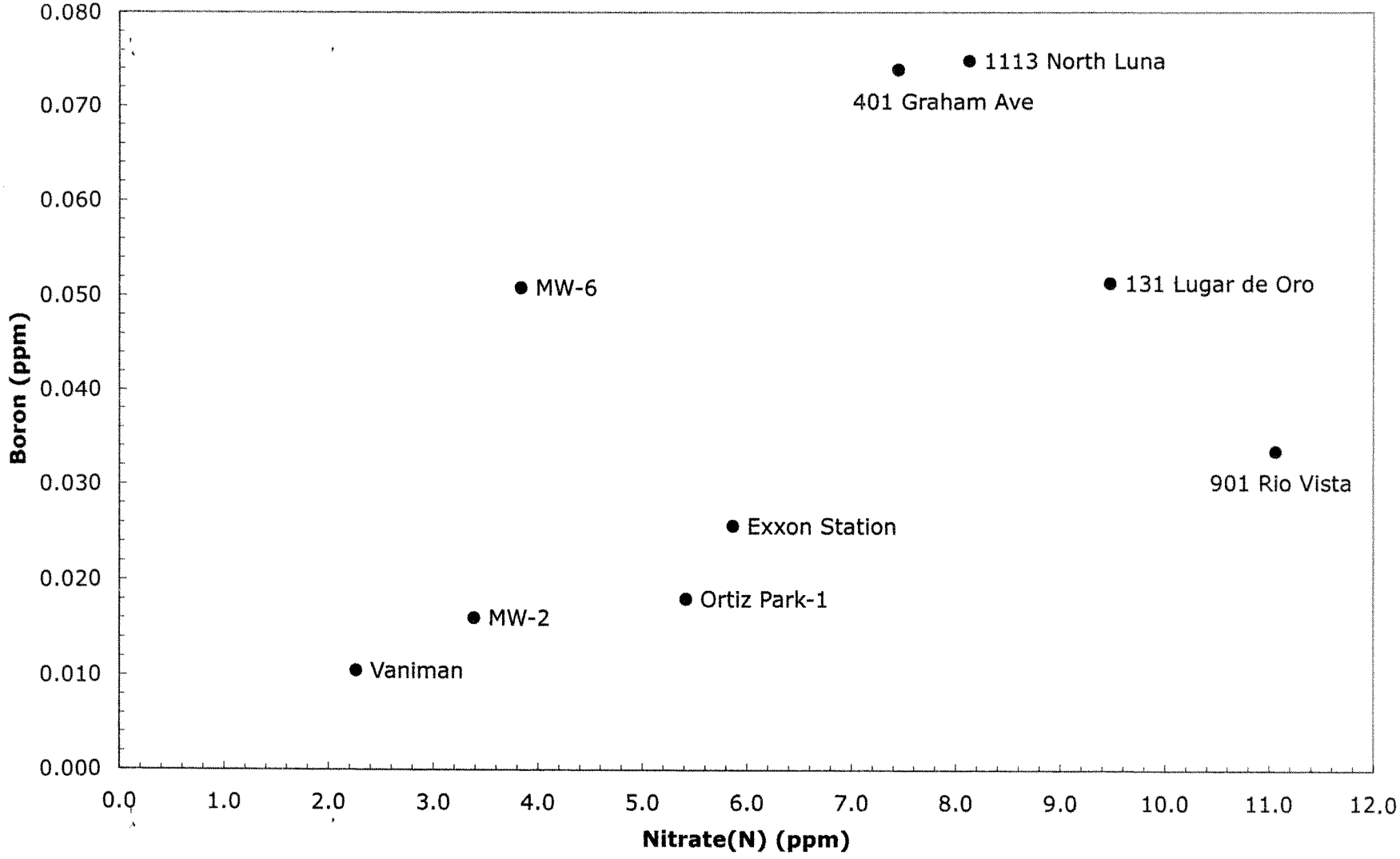
Bicarbonate Versus Calcium and Total Dissolved Solids at Ortiz Park and Surrounding Areas



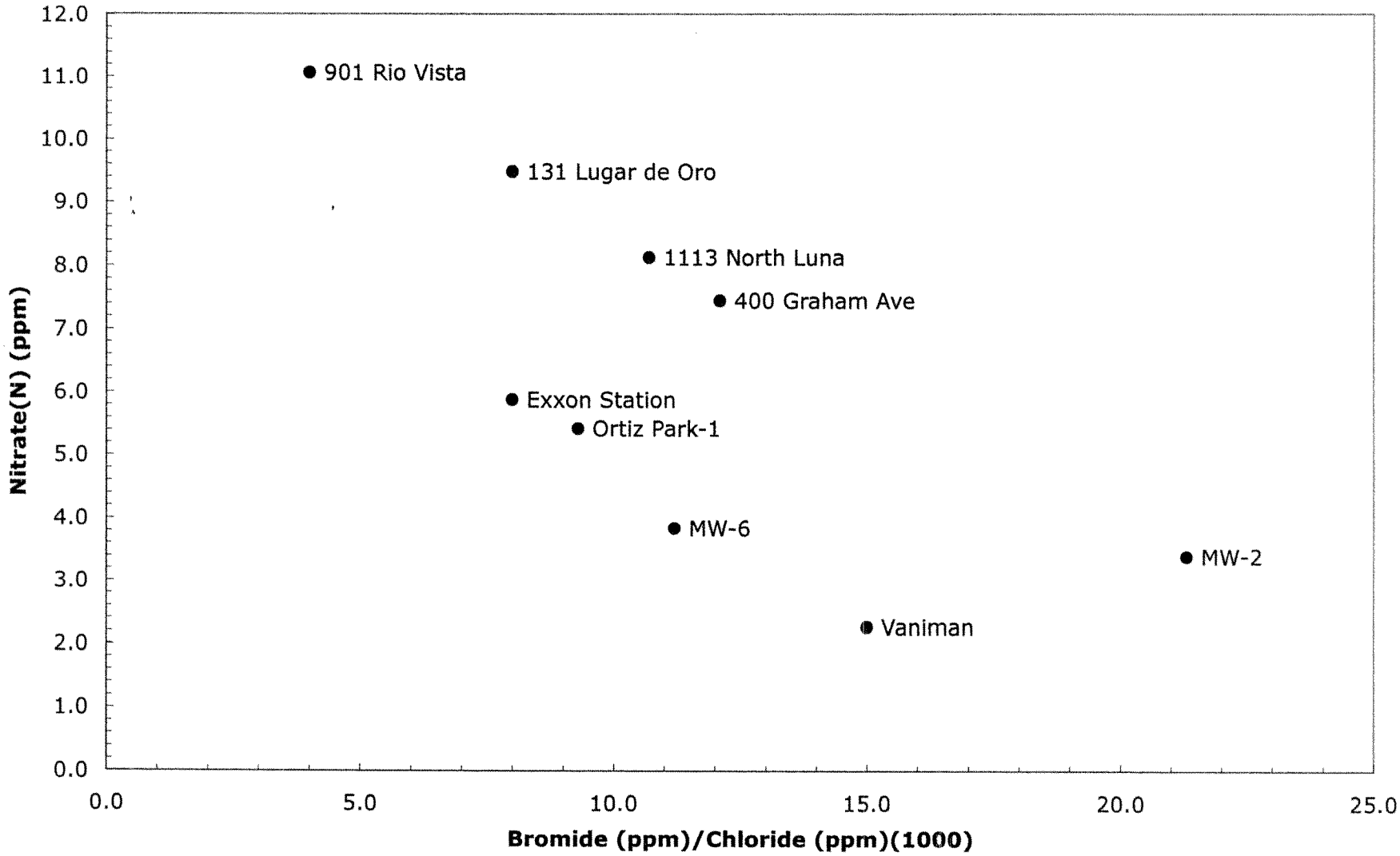
Nitrate(N) Versus Chromium at Ortiz Park and Surrounding Areas



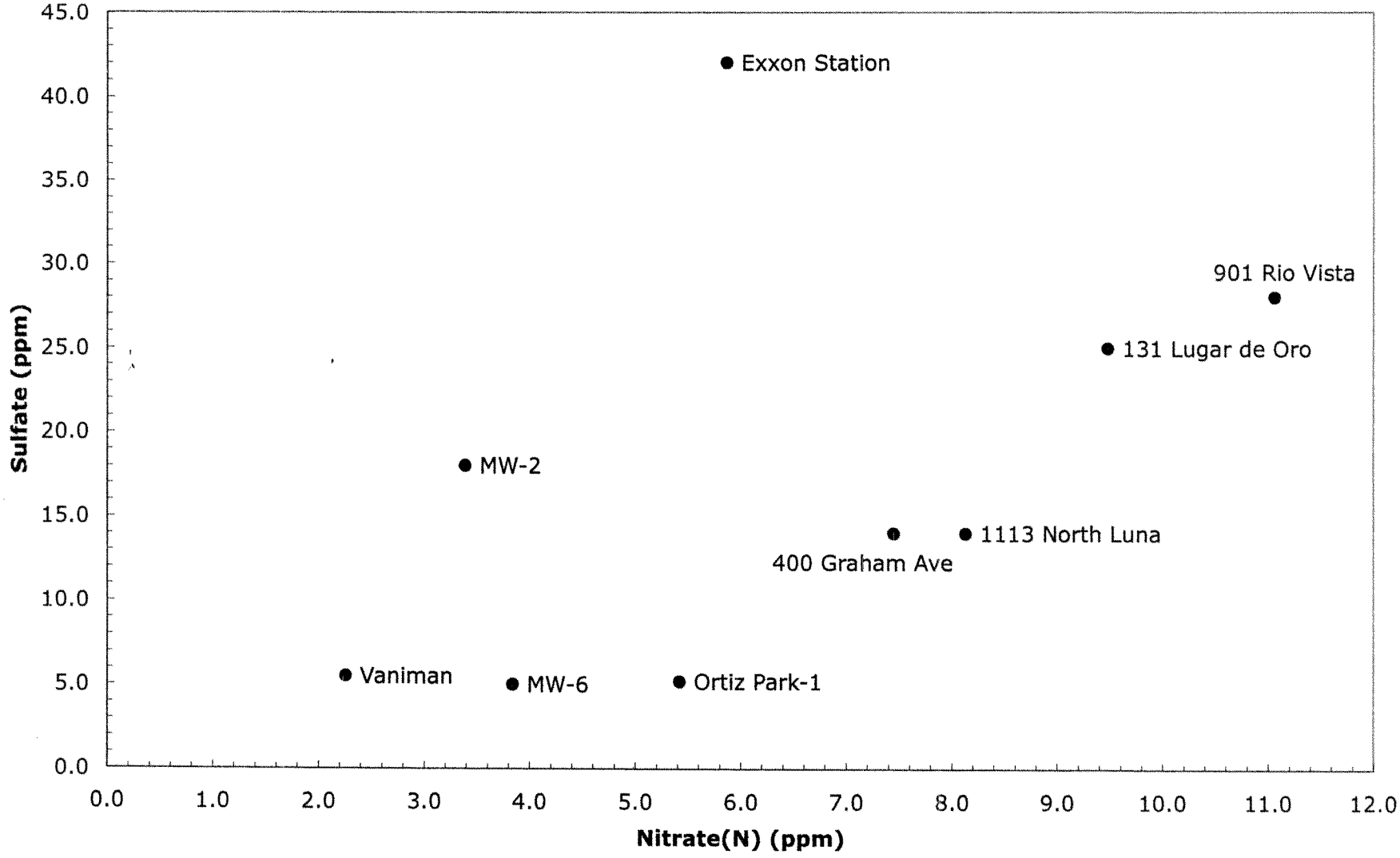
Nitrate(N) Versus Boron at Ortiz Park and Surrounding Areas



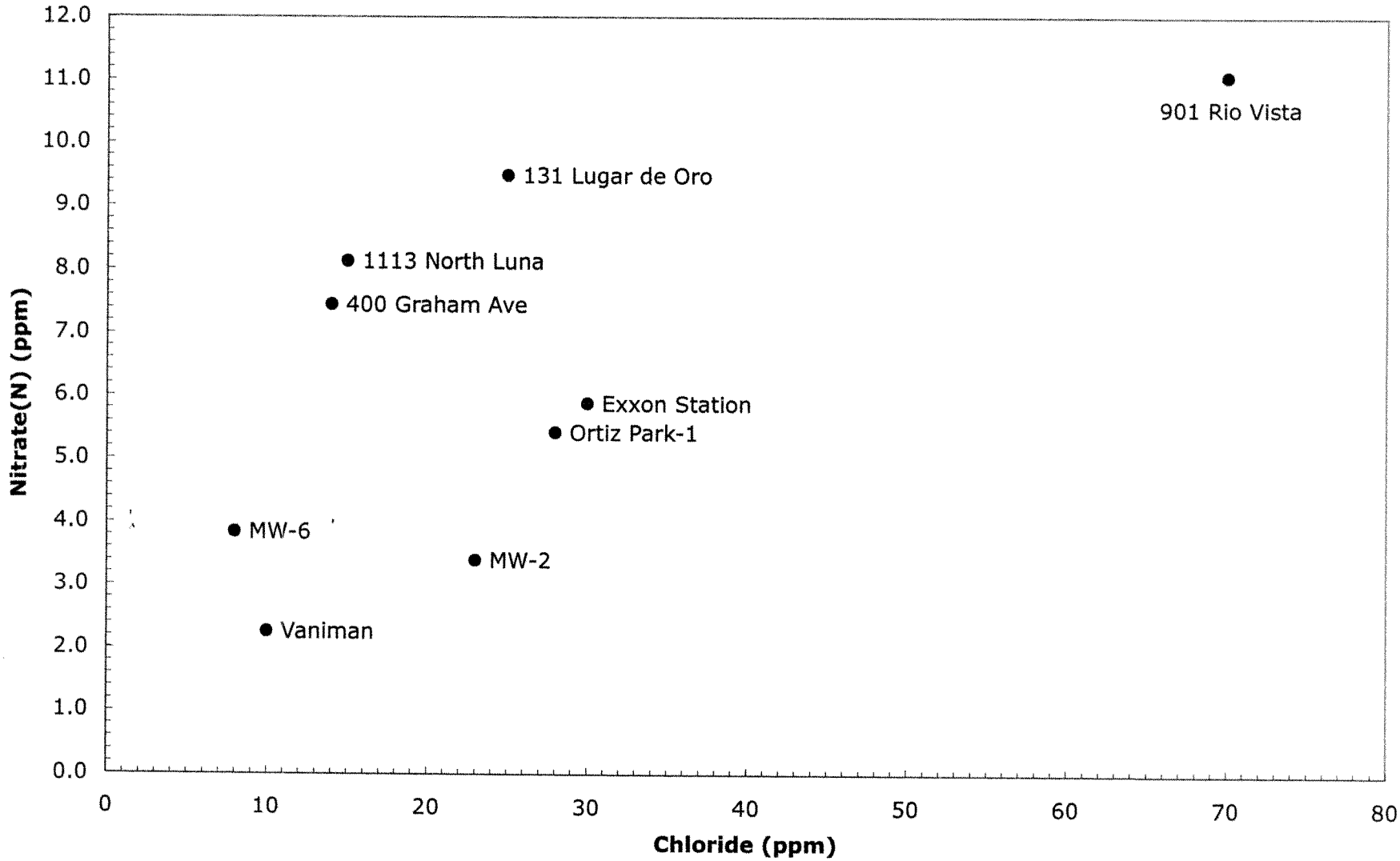
Bromide/Choride Versus Nitrate(N) at Ortiz Park and Surrounding Areas



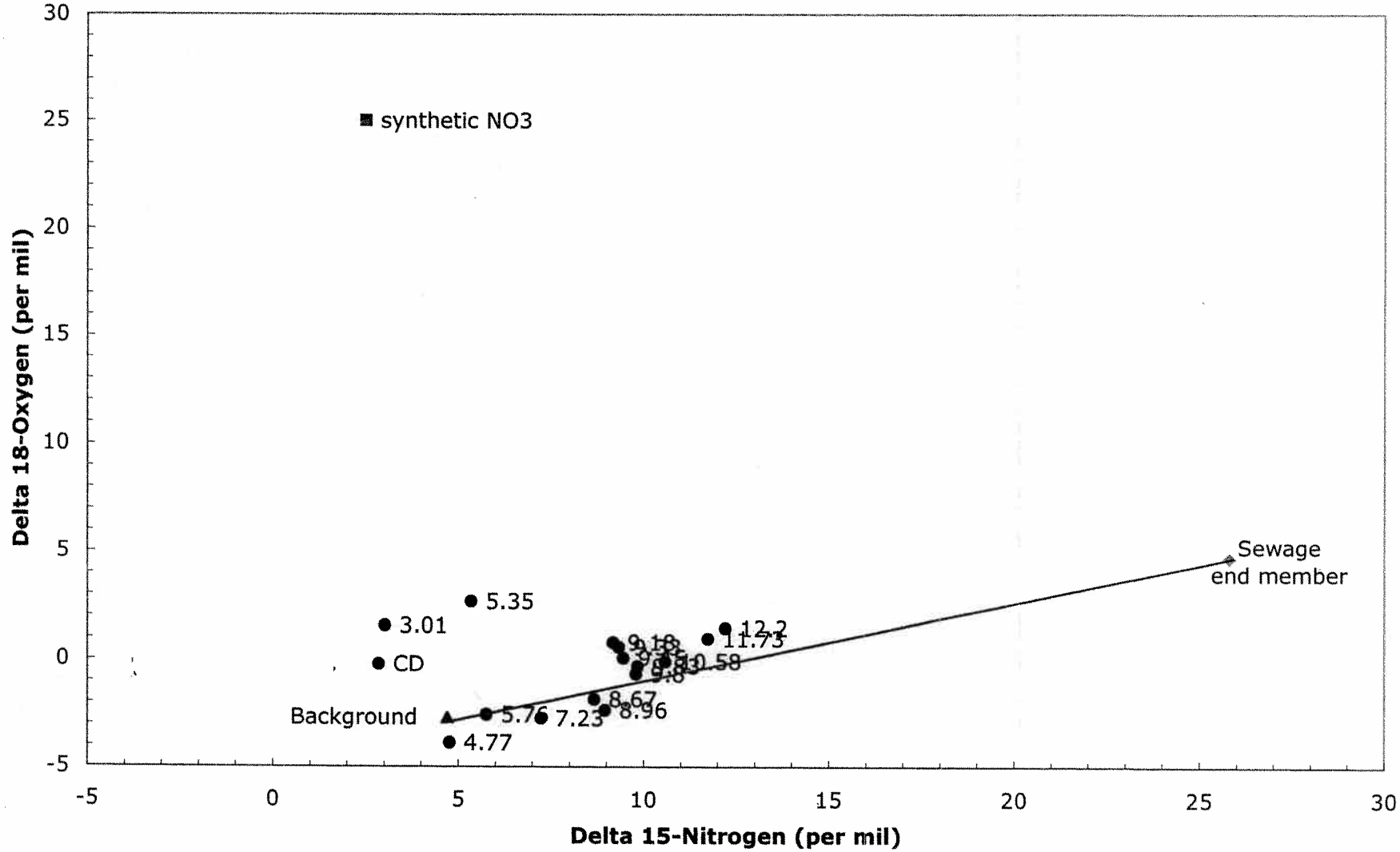
Nitrate(N) Versus Sulfate at the Ortiz Park and Surrounding Areas

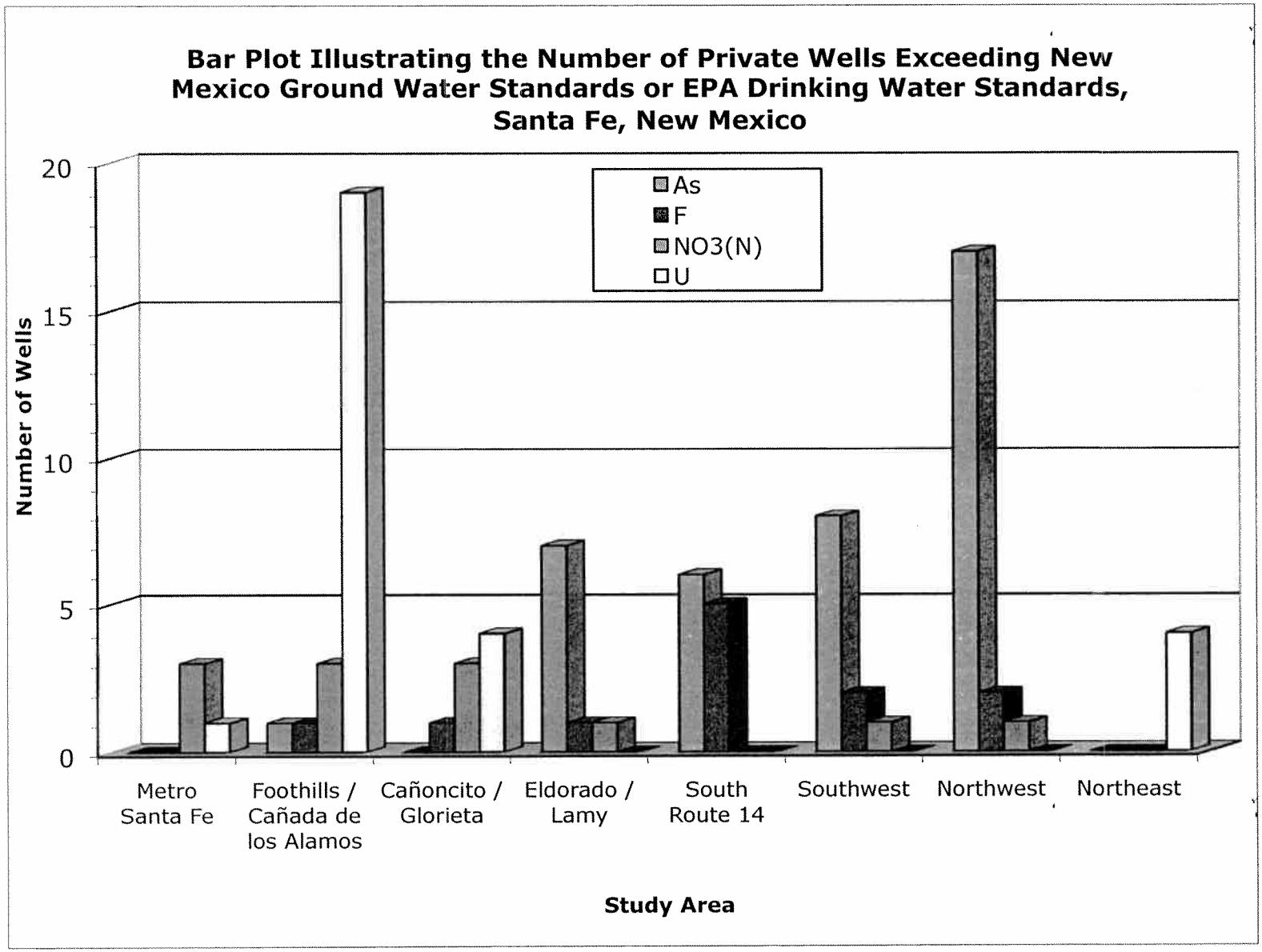


Chloride Versus Nitrate(N) at the Ortiz Park and Surrounding Areas



Delta 15-Nitrogen (per mil) Versus Delta 18-Oxygen (per mil)
in Groundwater, Santa Fe County, New Mexico




Bar Plot Illustrating the Number of Private Wells Exceeding New Mexico Ground Water Standards or EPA Drinking Water Standards, Santa Fe, New Mexico
As
F
NO3(N)
U
Number of Wells
20
15
10
5
0
Metro Santa Fe
Foothills / Cañada de los Alamos
Cañoncito / Glorieta
Eldorado / Lamy
South Route 14
Southwest
Northwest
Northeast
Study Area

APPENDIX G

NMED-SWMR SUBSECTIONS A/C AND MINIMUM PARAMETERS GROUNDWATER ANALYTES

Title 20 Chapter 9 Part 9 Section 20 (20.9.9.20) Groundwater Monitoring Parameter List

Effective Date August 2, 2007

Revised December 21, 2009 - Corrected Ground Water Protection Standards (GWPS) and AML values for certain inorganic parameters.

All testing undertaken after the effective date should be completed in accordance with this parameter list.

Subsection A (81 Parameters)

CAS #	Hazardous	Common Name	Alternate Name(s)	Listed in 20.6.2.3103.B & C	Toxic Pollutant Listed in 20.6.2.7	GWPS	PQL (to be established by permittee)	AML (see notes 5, 6, 7)	Units
Heavy metals (15)									
7440-36-0*	X	Antimony				0.006		0.003	mg/L
7440-38-2*	X	Arsenic				0.01		0.005	mg/L
7440-39-3*	X	Barium				1		0.5	mg/L
7440-41-7*	X	Beryllium				0.004		0.002	mg/L
7440-43-9*	X	Cadmium				0.005		0.0025	mg/L
7440-47-3*	X	Chromium (total)				0.05		0.025	mg/L
7440-48-4*	X	Cobalt		X		0.05		0.025	mg/L
7440-50-8*	X	Copper		X		1.0		0.5	mg/L
7439-92-1*	X	Lead				0.05		0.025	mg/L
7440-02-0*	X	Nickel		X		0.2		0.1	mg/L
7782-49-2*	X	Selenium				0.05		0.025	mg/L
7440-22-4*	X	Silver				0.05		0.025	mg/L
7440-28-0*	X	Thallium				0.002		0.001	mg/L
7440-62-2	X	Vanadium							mg/L
7440-66-6*	X	Zinc		X		10.0		5.0	mg/L
Other inorganic chemicals (12)									
7429-90-5*		Aluminum		X		5.0		3.75	mg/L
7440-42-8*		Boron		X		0.75		0.5625	mg/L
16887-00-6		Chloride		X		250.0		187.5	mg/L
57-12-5	X	Cyanide (as free cyanide)				0.2		0.1	mg/L
16984-48-8	X	Fluoride				1.6		0.8	mg/L
7439-89-6*		Iron		X		1.0		0.75	mg/L
7439-96-5*		Manganese		X		0.2		0.15	mg/L
7439-97-6*	X	Mercury (total)				0.002		0.001	mg/L
7439-98-7*		Molybdenum		X		1		0.75	mg/L
14797-55-8	X	Nitrate (as N)				10		5	mg/L
14808-79-8		Sulfate		X		600.0		450.0	mg/L
7440-61-1	X	Uranium				0.03		0.015	mg/L
Radioactivity (1)									
7440-14-4	X	Radium-226 and Radium-228 (combined)				5		2.5	pCi/L
Volatile organic compounds (VOC) (45)									
67-64-1	X	Acetone	2-Propanone						mg/L
107-13-1	X	Acrylonitrile	2-Propenenitrile		X				mg/L
71-43-2	X	Benzene			X	0.005		0.0025	mg/L
74-97-5	X	Bromochloromethane	Chlorobromethane						mg/L
75-27-4	X	Bromodichloromethane	Dibromochloromethane		X				mg/L
75-25-2	X	Bromoform	Tribromomethane		X				mg/L
75-15-0	X	Carbon disulfide							mg/L
56-23-5	X	Carbon tetrachloride	Tetrachloromethane		X	0.005		0.0025	mg/L
108-90-7	X	Chlorobenzene	Monochlorobenzene		X	0.1		0.05	mg/L
75-00-3	X	Chloroethane	Ethyl chloride						mg/L
67-66-3	X	Chloroform	Trichloromethane		X	0.1		0.05	mg/L
124-48-1	X	Dibromochloromethane	Chlorodibromomethane						mg/L
95-50-1	X	o-Dichlorobenzene	1,2-Dichlorobenzene		X	0.6		0.3	mg/L
106-46-7	X	p-Dichlorobenzene	1,4-Dichlorobenzene		X	0.075		0.0375	mg/L
110-57-6	X	trans-1,4-Dichloro-2-butene	1,4-Dichloro-(E)-2-butene						mg/L
75-34-3	X	1,1-Dichloroethane	Ethylidene chloride		X	0.025		0.0125	mg/L

CAS #	Hazardous	Common Name	Alternate Name(s)	Listed in 20.6.2.3103.B & C	Toxic Pollutant Listed in 20.6.2.7	GWPS	PQL (to be established by permittee)	AML (see notes 5, 6, 7)	Units
107-06-2	X	1,2-Dichloroethane	Ethylene dichloride; EDC		X	0.005		0.0025	mg/L
75-35-4	X	1,1-Dichloroethylene	1,1-Dichloroethene; Vinylidene chloride; 1,1-DCE		X	0.005		0.0025	mg/L
156-59-2	X	cis-1,2-Dichloroethylene	cis-1,2-Dichloroethene; 1,2-Dichloro-(Z)-ethene		X	0.07		0.035	mg/L
156-60-5	X	trans-1,2-Dichloroethylene	trans-1,2-Dichloroethene; 1,2-Dichloro-(E)-ethene		X	0.1		0.05	mg/L
78-87-5	X	1,2-Dichloropropane	Propylene dichloride			0.005		0.0025	mg/L
10061-01-5	X	cis-1,3-Dichloropropene	1,3-Dichloro-(Z)-propene		X				mg/L
10061-02-6	X	trans-1,3-Dichloropropene	1,3-Dichloro-(E)-propene		X				mg/L
100-41-4	X	Ethylbenzene			X	0.7		0.35	mg/L
591-78-6	X	2-Hexanone	Methyl butyl ketone						mg/L
74-83-9	X	Methyl bromide	Bromomethane		X				mg/L
74-87-3	X	Methyl chloride	Chloromethane		X				mg/L
74-95-3	X	Methylene bromide	Dibromomethane						mg/L
75-09-2	X	Methylene chloride	Dichloromethane		X	0.005		0.0025	mg/L
78-93-3	X	Methyl ethyl ketone	MEK; 2-Butanone						mg/L
74-88-4	X	Methyl iodide	Iodomethane						mg/L
108-10-1	X	4-Methyl-2-pentanone	Methyl isobutyl ketone						mg/L
100-42-5	X	Styrene	Ethenylbenzene			0.1		0.05	mg/L
630-20-6	X	1,1,1,2-Tetrachloroethane							mg/L
79-34-5	X	1,1,2,2-Tetrachloroethane			X	0.01		0.005	mg/L
127-18-4	X	Tetrachloroethylene	Tetrachloroethene; Percholoroethylene; 1,1,2,2-Tetrachloroethylene; PCE; Ethylene tetrachloride		X	0.005		0.0025	mg/L
108-88-3	X	Toluene	Methylbenzene		X	0.75		0.375	mg/L
71-55-6	X	1,1,1-Trichloroethane	Methylchloroform		X	0.06		0.03	mg/L
79-00-5	X	1,1,2-Trichloroethane			X	0.005		0.0025	mg/L
79-01-6	X	Trichloroethylene	Trichloroethene; 1,1,2-Trichloroethylene; TCE		X	0.005		0.0025	mg/L
75-69-4	X	Trichlorofluoromethane	CFC-11		X				mg/L
96-18-4	X	1,2,3-Trichloropropane							mg/L
108-05-4	X	Vinyl acetate	Acetic acid ethenyl ester						mg/L
75-01-4	X	Vinyl Chloride	Chloroethene		X	0.001		0.0005	mg/L
1330-20-7	X	Xylene (total) (see note 1)	Dimethylbenzene		X	0.62		0.31	mg/L
EDB & DBCP (2)									
106-93-4	X	1,2-Dibromoethane	Ethylene dibromide; EDB		X	0.00005		0.000025	mg/L
96-12-8	X	1,2-Dibromo-3-chloropropane	DBCP			0.0002		0.0001	mg/L
Semivolatile organic compounds (SVOC) (1)									
	X	Phenols (total)	Phenolics	X	X	0.005		0.0025	mg/L
Polycyclic Aromatic Hydrocarbons (PAH) (2)									
50-32-8	X	Benzo(a)pyrene			X	0.0002		0.0001	mg/L
See note 3	X	Napthalene plus monomethylnaphthalenes			X	0.03		0.015	mg/L
Polychlorinated Biphenyls (PCB) (1)									
1336-36-3	X	Polychlorinated biphenyls (see note 2)	PCB's; 1,1'-Biphenyl chloro derivatives		X	0.0005		0.00025	mg/L
Physical parameters (2)									
		pH		X		Between 6 and 9		Between 6 and 9	Std. unit
		Total Dissolved Solids	TDS	X		1000.0		750.0	mg/L

Subsection B (235 Parameters)

Heavy metals (15)									
7440-36-0*	X	Antimony				0.006		0.003	mg/L
7440-38-2*	X	Arsenic				0.01		0.005	mg/L
7440-39-3*	X	Barium				1		0.5	mg/L
7440-41-7*	X	Beryllium				0.004		0.002	mg/L
7440-43-9*	X	Cadmium				0.005		0.0025	mg/L

CAS #	Hazardous	Common Name	Alternate Name(s)	Listed in 20.6.2.3103.B & C	Toxic Pollutant Listed in 20.6.2.7	GWPS	PQL (to be established by permittee)	AML (see notes 5, 6, 7)	Units
7440-47-3*	X	Chromium (total)				0.05		0.025	mg/L
7440-48-4*	X	Cobalt		X		0.05		0.025	mg/L
7440-50-8*	X	Copper		X		1.0		0.5	mg/L
7439-92-1*	X	Lead				0.05		0.025	mg/L
7440-02-0*	X	Nickel		X		0.2		0.1	mg/L
7782-49-2*	X	Selenium				0.05		0.025	mg/L
7440-22-4*	X	Silver				0.05		0.025	mg/L
7440-28-0*	X	Thallium				0.002		0.001	mg/L
7440-62-2	X	Vanadium							mg/L
7440-66-6*	X	Zinc		X		10.0		5.0	mg/L
Other inorganic chemicals (15)									
7429-90-5*		Aluminum		X		5.0		3.75	mg/L
7440-42-8*		Boron		X		0.75		0.5625	mg/L
16887-00-6		Chloride		X		250.0		187.5	mg/L
57-12-5	X	Cyanide (as free cyanide)				0.2		0.1	mg/L
16984-48-8	X	Fluoride				1.6		0.8	mg/L
7439-89-6*		Iron		X		1.0		0.75	mg/L
7439-96-5*		Manganese		X		0.2		0.15	mg/L
7439-97-6*	X	Mercury (total)				0.002		0.001	mg/L
7439-98-7*		Molybdenum		X		1		0.75	mg/L
14797-55-8	X	Nitrate (as N)				10		5	mg/L
14797-73-0	X	Perchlorate			X				mg/L
14808-79-8		Sulfate		X		600.0		450.0	mg/L
18496-25-8	X	Sulfide							mg/L
7440-31-5	X	Tin							mg/L
7440-61-1	X	Uranium				0.03		0.015	mg/L
Radioactivity (1)									
7440-14-4	X	Radium-226 and Radium-228 (combined)				5		2.5	pCi/L
Volatile organic compounds (VOC) (62)									
67-64-1	X	Acetone	2-Propanone						mg/L
75-05-8	X	Acetonitrile	Methyl cyanide						mg/L
107-02-8	X	Acrolein	2-Propenal		X				mg/L
107-13-1	X	Acrylonitrile	2-Propenenitrile		X				mg/L
107-05-1	X	Allyl chloride	3-Chloro-1-propene						mg/L
71-43-2	X	Benzene			X	0.005		0.0025	mg/L
542-88-1	X	Bis(chloromethyl) ether	Oxybis[chloromethane]; BCME		X				mg/L
74-97-5	X	Bromochloromethane	Chlorobromethane						mg/L
75-27-4	X	Bromodichloromethane	Dibromochloromethane		X				mg/L
75-25-2	X	Bromoform	Tribromomethane		X				mg/L
75-15-0	X	Carbon disulfide							mg/L
56-23-5	X	Carbon tetrachloride	Tetrachloromethane		X	0.005		0.0025	mg/L
108-90-7	X	Chlorobenzene	Monochlorobenzene		X	0.1		0.05	mg/L
75-00-3	X	Chloroethane	Ethyl chloride						mg/L
67-66-3	X	Chloroform	Trichloromethane		X	0.1		0.05	mg/L
126-99-8	X	Chloroprene	2-Chloro-1,3-butadiene						mg/L
124-48-1	X	Dibromochloromethane	Chlorodibromomethane						mg/L
541-73-1	X	m-Dichlorobenzene	1,3-Dichlorobenzene		X				mg/L
95-50-1	X	o-Dichlorobenzene	1,2-Dichlorobenzene		X	0.6		0.3	mg/L
106-46-7	X	p-Dichlorobenzene	1,4-Dichlorobenzene		X	0.075		0.0375	mg/L
110-57-6	X	trans-1,4-Dichloro-2-butene	1,4-Dichloro-(E)-2-butene						mg/L
75-71-8	X	Dichlorodifluoromethane	CFC-12		X				mg/L
75-34-3	X	1,1-Dichloroethane	Ethylidene chloride; 1,1-DCA		X	0.025		0.0125	mg/L
107-06-2	X	1,2-Dichloroethane	Ethylene dichloride; EDC		X	0.005		0.0025	mg/L
75-35-4	X	1,1-Dichloroethylene	1,1-Dichloroethene; Vinylidene chloride; 1,1-DCE		X	0.005		0.0025	mg/L
156-59-2	X	cis-1,2-Dichloroethylene	cis-1,2-Dichloroethene; 1,2-Dichloro-(Z)-ethene		X	0.07		0.035	mg/L
156-60-5	X	trans-1,2-Dichloroethylene	trans-1,2-Dichloroethene; 1,2-Dichloro-(E)-ethene		X	0.1		0.05	mg/L
78-87-5	X	1,2-Dichloropropane	Propylene dichloride			0.005		0.0025	mg/L
142-28-9	X	1,3-Dichloropropane	Trimethylene dichloride						mg/L
594-20-7	X	2,2-Dichloropropane	Isopropylidene chloride						mg/L
563-58-6	X	1,1-Dichloropropene	1,1-Dichloropropylene		X				mg/L

CAS #	Hazardous	Common Name	Alternate Name(s)	Listed in 20.6.2.3103.B & C	Toxic Pollutant Listed in 20.6.2.7	GWPS	PQL (to be established by permittee)	AML (see notes 5, 6, 7)	Units
10061-01-5	X	cis-1,3-Dichloropropene	1,3-Dichloro-(Z)-propene		X				mg/L
10061-02-6	X	trans-1,3-Dichloropropene	1,3-Dichloro-(E)-propene		X				mg/L
100-41-4	X	Ethylbenzene			X	0.7		0.35	mg/L
97-63-2	X	Ethyl methacrylate	2-Propenoic acid, 2-methyl-, ethyl ester						mg/L
591-78-6	X	2-Hexanone	Methyl butyl ketone						mg/L
78-83-1	X	Isobutyl alcohol	2-Methyl-1-propanol						mg/L
126-98-7	X	Methacrylonitrile	2-Methyl-2-propenenitrile						mg/L
74-83-9	X	Methyl bromide	Bromomethane		X				mg/L
74-87-3	X	Methyl chloride	Chloromethane		X				mg/L
74-95-3	X	Methylene bromide	Dibromomethane						mg/L
75-09-2	X	Methylene chloride	Dichloromethane		X	0.005		0.0025	mg/L
78-93-3	X	Methyl ethyl ketone	MEK; 2-Butanone						mg/L
74-88-4	X	Methyl iodide	Iodomethane						mg/L
80-62-6	X	Methyl methacrylate	2-Methyl-2-propenoic acid, methyl ester						mg/L
108-10-1	X	4-Methyl-2-pentanone	Methyl isobutyl ketone						mg/L
1634-04-4	X	Methyl tert-butyl ether	MTBE; 2-Methoxy-2-methylpropane		X				mg/L
107-12-0	X	Propionitrile	Propanenitrile; Ethyl cyanide						mg/L
100-42-5	X	Styrene	Ethenylbenzene			0.1		0.05	mg/L
630-20-6	X	1,1,1,2-Tetrachloroethane							mg/L
79-34-5	X	1,1,2,2-Tetrachloroethane			X	0.01		0.005	mg/L
127-18-4	X	Tetrachloroethylene	Tetrachloroethene; Percholoroethylene; 1,1,2,2-Tetrachloroethylene; PCE; Ethylene tetrachloride		X	0.005		0.0025	mg/L
108-88-3	X	Toluene	Methylbenzene		X	0.75		0.375	mg/L
120-82-1	X	1,2,4-Trichlorobenzene				0.07		0.035	mg/L
71-55-6	X	1,1,1-Trichloroethane	Methylchloroform		X	0.06		0.03	mg/L
79-00-5	X	1,1,2-Trichloroethane			X	0.005		0.0025	mg/L
79-01-6	X	Trichloroethylene	Trichloroethene; 1,1,2-Trichloroethylene; TCE		X	0.005		0.0025	mg/L
75-69-4	X	Trichlorofluoromethane	CFC-11		X				mg/L
96-18-4	X	1,2,3-Trichloropropane							mg/L
108-05-4	X	Vinyl acetate	Acetic acid ethenyl ester						mg/L
75-01-4	X	Vinyl Chloride	Chloroethene		X	0.001		0.0005	mg/L
1330-20-7	X	Xylene (total) (see note 1)	Dimethylbenzene		X	0.62		0.31	mg/L
EDB & DBCP (2)									
106-93-4	X	1,2-Dibromoethane	Ethylene dibromide; EDB		X	0.00005		0.000025	mg/L
96-12-8	X	1,2-Dibromo-3-chloropropane	DBCP			0.0002		0.0001	mg/L
Semivolatile organic compounds (SVOC) (78)									
98-86-2	X	Acetophenone	1-Phenylethanone						mg/L
53-96-3	X	2-Acetylaminofluorene	2-AAF; Acetylaminofluorene						mg/L
92-67-1	X	4-Aminobiphenyl	[1,1'-Biphenyl]-4-amine						mg/L
92-87-5	X	Benzidine	[1,1'-Biphenyl]-4,4'-diamine; 4,4'-Diaminobiphenyl		X				mg/L
100-51-6	X	Benzyl alcohol	Benzenemethanol						mg/L
111-91-1	X	Bis(2-chloroethoxy)methane	Dichloromethoxy ethane						mg/L
111-44-4	X	Bis(2-chloroethyl)ether	Dichloroethyl ether; DCEE		X				mg/L
108-60-1	X	Bis(2-chloro-1-methylethyl) ether	2,2'-Dichlorodiisopropyl ether; DCIP; Bis(2-chloroisopropyl) ether		X				mg/L
117-81-7	X	Bis (2-ethylhexyl) phthalate	Di (2-ethylhexyl)phthalate		X				mg/L
101-55-3	X	4-Bromophenyl phenyl ether	1-Bromo-4-phenoxybenzene						mg/L
85-68-7	X	Butyl benzyl phthalate	Benzyl butyl phthalate; BBP						mg/L
106-47-8	X	p-Chloroaniline	4-Chloroaniline; 4-Chlorobenzenamine						mg/L
510-15-6	X	Chlorobenzilate	Ethyl-4,4'-dichlorobenzilate						mg/L
59-50-7	X	p-Chloro-m-creosol	4-Chloro-3-methylphenol						mg/L
91-58-7	X	2-Chloronaphthalene							mg/L
95-57-8	X	2-Chlorophenol							mg/L
7005-72-3	X	4-Chlorophenyl phenyl ether	1-Chloro-4-phenoxybenzene						mg/L
108-39-4	X	m-Cresol	3-Methylphenol						mg/L
95-48-7	X	o-Cresol	2-Methylphenol						mg/L
106-44-5	X	p-Cresol	4-Methylphenol						mg/L
132-64-9	X	Dibenzofuran							mg/L
84-74-2	X	Di-n-butyl phthalate	Dibutyl phthalate		X				mg/L
91-94-1	X	3,3'-Dichlorobenzidine	3,3'-Dichloro-[1,1'-biphenyl]-4,4'-diamine		X				mg/L
120-83-2	X	2,4-Dichlorophenol			X				mg/L
87-65-0	X	2,6-Dichlorophenol							mg/L

CAS #	Hazardous	Common Name	Alternate Name(s)	Listed in 20.6.2.3103.B & C	Toxic Pollutant Listed in 20.6.2.7	GWPS	PQL (to be established by permittee)	AML (see notes 5, 6, 7)	Units
84-66-2	X	Diethyl phthalate	1,2-Benzenedicarboxylic acid, diethyl ester		X				mg/L
60-11-7	X	p-(Dimethylamino)azobenzene	4-Dimethylaminoazobenzene; N,N-Dimethyl-4-(phenylazo)-benzenamine						mg/L
57-97-6	X	7,12-Dimethylbenz(a)anthracene							mg/L
119-93-7	X	3,3'-Dimethylbenzidine	3,3'-Dimethyl-[1,1'-Biphenyl]-4,4'-diamine						mg/L
122-09-8	X	alpha, alpha-Dimethylphenethylamine	A,A-Dimethylphenethylamine; α,α-Dimethyl-benzeneethanamine						mg/L
105-67-9	X	2,4-Dimethylphenol	m-Xylenol						mg/L
131-11-3	X	Dimethyl phthalate	1,2-Benzenedicarboxylic acid, dimethyl ester		X				mg/L
534-52-1	X	4,6-Dinitro-o-cresol	4,6-Dinitro-2-methylphenol; 2,4-Dinitro-o-cresol		X				mg/L
51-28-5	X	2,4-Dinitrophenol			X				mg/L
117-84-0	X	Di-n-octyl phthalate	1,2-Benzenedicarboxylic acid, dioctyl ester						mg/L
122-39-4	X	Diphenylamine	N-Phenylbenzenamine; N-Phenylaniline; Phenylaminobenzene						mg/L
122-66-7	X	1,2-Diphenylhydrazine	N,N'-Diphenylhydrazine		X				mg/L
62-50-0	X	Ethyl methanesulfonate	Methanosulfonic acid, ethyl ester						mg/L
118-74-1	X	Hexachlorobenzene			X	0.001		0.0005	mg/L
87-68-3	X	Hexachlorobutadiene	1,1,2,3,4,4-Hexachloro-1,3-butadiene		X				mg/L
77-47-4	X	Hexachlorocyclopentadiene	1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene		X	0.05		0.025	mg/L
67-72-1	X	Hexachloroethane			X				mg/L
1888-71-7	X	Hexachloropropene	1,1,2,3,3,3-Hexachloro-1-propene						mg/L
78-59-1	X	Isophorone	3,5,5-Trimethyl-2-cyclohexen-1-one		X				mg/L
120-58-1	X	Isosafrole	5-(1-Propenyl)-1,3-benzodioxole						mg/L
91-80-5	X	Methapyrilene							mg/L
56-49-5	X	3-Methylcholanthrene	1,2-Dihydro-3-methylbenz[j]aceanthrylene						mg/L
66-27-3	X	Methyl methanesulfonate	Methanosulfonic acid, methyl ester						mg/L
130-15-4	X	1,4-Naphthoquinone	1,4-Naphthalenedione						mg/L
134-32-7	X	1-Naphthylamine	1-Naphthalenamine						mg/L
91-59-8	X	2-Naphthylamine	2-Naphthalenamine						mg/L
88-74-4	X	o-Nitroaniline	2-Nitroaniline; 2-Nitrobenzenamine						mg/L
99-09-2	X	m-Nitroaniline	3-Nitroaniline; 3-Nitrobenzenamine						mg/L
100-01-06	X	p-Nitroaniline	4-Nitroaniline; 4-Nitrobenzenamine						mg/L
88-75-5	X	o-Nitrophenol	2-Nitrophenol						mg/L
100-02-7	X	p-Nitrophenol	4-Nitrophenol						mg/L
924-16-3	X	N-Nitrosodi-n-butylamine	N-Butyl-N-nitroso-1-butanamine						mg/L
55-18-5	X	N-Nitrosodiethylamine	N-Ethyl-N-nitrosoethanamine		X				mg/L
62-75-9	X	N-Nitrosodimethylamine	N-Methyl-N-nitrosomethanamine		X				mg/L
86-30-6	X	N-Nitrosodiphenylamine	N-Nitroso-N- phenylbenzenamine		X				mg/L
621-64-7	X	N-Nitrosodipropylamine	N-Nitroso-N-dipropylamine; N-Nitroso-N-propyl-1-propanamine; N-Nitrosodi-N-propylamine; Di-n-propylnitrosamine						mg/L
10595-95-6	X	N-Nitrosomethylethylamine	N-Methyl-N-nitrosoethanamine						mg/L
100-75-4	X	N-Nitrosopiperidine	1-Nitrosopiperidine						mg/L
930-55-2	X	N-Nitrosopyrrolidine	1-Nitrosopyrrolidine		X				mg/L
99-55-8	X	5-Nitro-o-toluidine	2-Methyl-5-nitrobenzenamine						mg/L
608-93-5	X	Pentachlorobenzene			X				mg/L
82-68-8	X	Pentachloronitrobenzene							mg/L
62-44-2	X	Phenacetin	N-(4-ethoxyphenyl) acetamide						mg/L
	X	Phenols (total)	Phenolics	X	X	0.005		0.0025	mg/L
106-50-3	X	p-Phenylenediamine	4-Phenylenediamine; 1,4-Benzenediamine						mg/L
23950-58-5	X	Pronamide	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)-benzamide						mg/L
94-59-7	X	Safrole	5-(2-Propenyl)-1,3-benzodioxole						mg/L
95-94-3	X	1,2,4,5-Tetrachlorobenzene			X				mg/L
58-90-2	X	2,3,4,6-Tetrachlorophenol							mg/L
95-53-4	X	o-Toluidine	2-Methylbenzenamine						mg/L
95-95-4	X	2,4,5-Trichlorophenol			X				mg/L
88-06-2	X	2,4,6-Trichlorophenol			X				mg/L
126-68-1	X	O,O,O-Triethyl phosphorothioate	Phosphorothioic acid, O,O,O-triethyl ester						mg/L
Polycyclic Aromatic Hydrocarbons (PAH) (16)									

CAS #	Hazardous	Common Name	Alternate Name(s)	Listed in 20.6.2.3103.B & C	Toxic Pollutant Listed in 20.6.2.7	GWPS	PQL (to be established by permittee)	AML (see notes 5, 6, 7)	Units
83-32-9	X	Acenaphthene	1,2-Dihydroacenaphthylene						mg/L
208-96-8	X	Acenaphthylene							mg/L
120-12-7	X	Anthracene			X				mg/L
56-55-3	X	Benzo(a)anthracene	Benzanthracene						mg/L
50-32-8	X	Benzo(a)pyrene			X	0.0002		0.0001	mg/L
205-99-2	X	Benzo(b)fluoranthene	Benz(e)acephenanthrylene; 3,4-benzofluoranthene		X				mg/L
207-08-9	X	Benzo(k)fluoaranthene			X				mg/L
191-24-2	X	Benzo(ghi)perylene							mg/L
218-01-9	X	Chrysene							mg/L
53-70-3	X	Dibenz(a,h)anthracene							mg/L
206-44-0	X	Fluoranthene			X				mg/L
86-73-7	X	Fluorene	9H-Fluorene		X				mg/L
193-39-5	X	Indeno(1,2,3-cd)pyrene							mg/L
See note 3	X	Napthalene plus monomethylnaphthalenes			X	0.03		0.015	mg/L
85-01-8	X	Phenanthrene			X				mg/L
129-00-0	X	Pyrene			X				mg/L
Polychlorinated Biphenyls (PCB) (1)									
1336-36-3	X	Polychlorinated biphenyls (see note 2)	PCB's; 1,1'-Biphenyl chloro derivatives		X	0.0005		0.00025	mg/L
Organochlorine Pesticides (21)									
309-00-2	X	Aldrin	HHDN		X				mg/L
319-84-6	X	alpha-BHC	alpha-Hexachlorocyclohexane; alpha-HCH		X				mg/L
319-85-7	X	beta-BHC	beta-Hexachlorocyclohexane; beta-HCH		X				mg/L
319-86-8	X	delta-BHC	delta-Hexachlorocyclohexane		X				mg/L
58-89-9	X	gamma-BHC	Lindane; gamma-Hexachlorocyclohexane; gamma-HCH		X	0.0002		0.0001	mg/L
57-74-9	X	Chlordane			X	0.002		0.001	mg/L
72-54-8	X	4,4'-DDD	4,4'-Dichlorodiphenyldichloroethane; p,p'-DDD						mg/L
72-55-9	X	4,4'-DDE	4,4'-Dichlorodiphenyldichloroethene; p,p'-DDE						mg/L
50-29-3	X	4,4'-DDT	4,4'-Dichlorodiphenyltrichloroethane; p,p'-DDT		X				mg/L
60-57-1	X	Dieldrin			X				mg/L
959-98-8	X	Endosulfan I	alpha-Endosulfan		X				mg/L
33213-65-9	X	Endosulfan II	beta-Endosulfan		X				mg/L
1031-07-8	X	Endosulfan sulfate							mg/L
72-20-8	X	Endrin			X	0.002		0.001	mg/L
7421-93-4	X	Endrin aldehyde							mg/L
76-44-8	X	Heptachlor			X	0.0004		0.0002	mg/L
1024-57-3	X	Heptachlor epoxide				0.0002		0.0001	mg/L
465-73-6	X	Isodrin							mg/L
143-50-0	X	Kepone	Chlordecone						mg/L
72-43-5	X	Methoxychlor	1,1'-(2,2,2-Trichloroethylidene)bis[4-methoxybenzene]			0.04		0.02	mg/L
8001-35-2	X	Toxaphene (see note 4)			X	0.003		0.0015	mg/L
Organophosphorus Pesticides (7)									
60-51-5	X	Dimethoate	Phosphorodithioic acid, O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester						mg/L
298-04-04	X	Disulfoton	Disyston						mg/L
52-85-7	X	Famphur							mg/L
298-00-0	X	Methyl parathion	Parathion methyl; Phosphorothioic acid, O,O-dimethyl						mg/L
56-38-2	X	Parathion	Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester						mg/L
298-02-2	X	Phorate	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester						mg/L
297-97-2	X	Thionazin	O,O-Diethyl O-2-pyrazinyl phosphorothioate						mg/L
Herbicides (6)									
94-75-7	X	2,4-D	2,4-Dichlorophenoxyacetic acid			0.07		0.035	mg/L
2303-16-4	X	Diallate							mg/L

CAS #	Hazardous	Common Name	Alternate Name(s)	Listed in 20.6.2.3103.B & C	Toxic Pollutant Listed in 20.6.2.7	GWPS	PQL (to be established by permittee)	AML (see notes 5, 6, 7)	Units
88-85-7	X	Dinoseb	DNBP: 2-sec-Butyl-4,6-dinitrophenol; 2-(1-Methylpropyl)-4,6-dinitrophenol			0.007		0.0035	mg/L
87-86-5	X	Pentachlorophenol			X	0.001		0.0005	mg/L
93-72-1	X	Silvex	2,4,5-TP; 2-(2,4,5-Trichlorophenoxy)-propanoic acid			0.05		0.025	mg/L
93-76-5	X	2,4,5-T	(2,4,5-Trichlorophenoxy)-acetic acid						mg/L
Dioxins (1)									
1746-01-6	X	2,3,7,8-TCDD	2,3,7,8-Tetrachlorodibenzo-p-dioxin; 2,3,7,8-Tetrachlorodibenzo[b,e][1,4]dioxin			0.03		0.015	ng/L
Nitroaromatics (Explosives) (8)									
99-65-0	X	m-Dinitrobenzene	1,3-Dinitrobenzene						mg/L
121-14-2	X	2,4-Dinitrotoluene	1-Methyl-2,4-dinitrobenzene; 2,4 DNT		X				mg/L
606-20-2	X	2,6-Dinitrotoluene	2-Methyl-1,3-dinitrobenzene; 2,6 DNT		X				mg/L
2691-41-0	X	HMX	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine		X				mg/L
98-95-3	X	Nitrobenzene			X				mg/L
121-82-4	X	RDX	Hexahydro-1,3,5-trinitro-1,3,5-triazine		X				mg/L
99-35-4	X	sym-Trinitrobenzene	1,3,5-Trinitrobenzene						mg/L
118-96-7	X	2,4,6-Trinitrotoluene	TNT; 2-Methyl-1,3,5-trinitrobenzene		X				mg/L
Physical parameters (2)									
		pH		X		Between 6 and 9		Between 6 and 9	Std. unit
		Total Dissolved Solids	TDS	X		1000.0		750.0	mg/L

Subsection C (15 Parameters)

Inorganic chemicals (9)									
1331-21-6		Ammonia (as N)							mg/L
7440-70-2*		Calcium							mg/L
7439-95-4*		Magnesium							mg/L
14265-44-2		Phosphate (total, as P)							mg/L
7440-09-7*		Potassium							mg/L
7440-23-5*		Sodium							mg/L
		Total Kjeldahl Nitrogen	TKN						mg/L
		Total Nitrogen							mg/L
		Total Organic Carbon	TOC						mg/L
Physical parameters (6)									
		Bicarbonate Alkalinity							mg/L
		Carbonate Alkalinity							mg/L
		Specific Conductance							µS/cm
		Temperature							degree C
		Depth to Ground Water							ft bgs
		Groundwater Elevation							ft amsl

NOTES:

* - CAS is for elemental form.

1- This entry includes o-xylene (CAS 96-47-6), m-xylene (CAS 108-38-3), p-xylene (CAS 106-42-3), and unspecified xylenes (dimethylbenzenes) (CAS 1330-20-7)

2 - This category contains congener chemicals, including constituents of Aroclor-1016 (CAS 12674-11-2), Aroclor-1221 (CAS 11104--28-2), Aroclor-1232 (CAS 11141-16-5), Aroclor-1242 (CAS 53469-21-9), Aroclor-1248 (CAS 12672-29-6), Aroclor-1254 (CAS 11097-69-1), and Aroclor-1260 (CAS 11096-82-5).

3 - This entry includes naphthalene (CAS 91-20-3), 1-methylnaphthalene (CAS 90-12-0), and 2-methylnaphthalene (CAS 91-57-6).

4 - This entry includes congener chemicals contained in technical toxaphene (CAS 8001-35-2), for example, chlorinated camphene.

5 - Assessment Monitoring Levels (AMLs) listed are presumptive values.

6 - For hazardous constituents without established GWPS, AMLs must be calculated from PQL values using the following formula: AML = 1.95 x PQL.

7 - The 2007 New Mexico Solid Waste Rules do not require establishing AMLs for constituents in Subsection C. However, background concentrations for these constituents still have to be established in accordance with 20.9.9.10.E NMAC.

GWPS -Ground Water Protection Standard

PQL- Practical Quantitation Limit

AML - Assessment Monitoring Level

ft bgs - feet below ground surface

ft amsl - feet above median sea level

***Chain of custody record attachment**

NMED-SWMR Minimum Alternative Parameter List

Parameters	Ground Water Protection St'd.		PQL	AML (presumptive)	CAL (presumptive)	Units
Organic Parameters						
1,1,1-Trichloroethane; (TCA)	0.06		0.005	0.03	0.045	mg/l
1,1,2,2-Tetrachloroethane	0.01		0.005	0.005	0.0075	mg/l
1,1,2-Trichloroethane	0.005		0.002	0.0025	0.00375	mg/l
1,1-Dichloroethane	0.025		0.005	0.0125	0.01875	mg/l
1,1-Dichloroethylene; (1,1-DCE)	0.005		0.001	0.0025	0.00375	mg/l
1,2-Dichloroethane; (EDC)	0.005		0.001	0.0025	0.00375	mg/l
1,2-Dichloropropane	0.005		0.0005	0.0025	0.00375	mg/l
1,2-Dichlorobenzene (o-Dichlorobenzene)	0.06		0.01	0.03	0.045	mg/l
1,3 Dichlorobenzene (m-Phenylene dichloride or m-Dichlorobenzene)			0.01			mg/l
1,4-Dichlorobenzene (p-Dichlorobenzene)	0.075		0.015	0.0375	0.5625	mg/l
Bromodichloromethane			0.005			mg/l
Bromoform			0.015			mg/l
Bromomethane (Methyl Bromide)			0.02			mg/l
Carbon tetrachloride	0.005		0.002	0.0025	0.00375	mg/l
Chlorobenzene	0.1		0.005	0.05	0.075	mg/l
Chloroethane			0.01			mg/l
Chloroform	0.1		0.005	0.05	0.75	mg/l
Chloromethane (Methyl chloride)			0.001			mg/l
cis-1,2-Dichloroethylene	0.07		0.005	0.035	0.0525	mg/l
cis-1,3-Dichloropropene			0.02			mg/l
Dibromochloromethane			0.005			mg/l
Ethylene dibromide; (EDB) (1,2 Dibromoethane)	0.00005		0.000025	0.000025	0.000038	mg/l
Methylene chloride	0.005		0.001	0.0025	0.00375	mg/l
Tetrachloroethylene; (PCE)	0.005		0.0005	0.0025	0.00375	mg/l
Total Organic Carbon			1			mg/l
trans-1,2-Dichloroethylene	0.1		0.005	0.05	0.075	mg/l
trans-1,3-Dichloropropene			0.01			mg/l
Trichloroethylene; (TCE)	0.005		0.001	0.0025	0.00375	mg/l
Trichlorofluoromethane (CFC-11)			0.01			mg/l
Vinyl Chloride	0.001		0.0004	0.0005	0.00075	mg/l
Inorganic Parameters						
Ammonia as (N)			0.5			mg/l
Calcium			1			mg/l
Chloride	250	(a)	5.0	187.5	250	mg/l
CO3; Carbonate Alkalinity			10			mg/l
HCO3; Bicarbonate Alkalinity			10			mg/l
Iron	0.3	(a)	0.1	0.225	0.3	mg/l
Magnesium			1			mg/l
Manganese	0.05	(a)	0.03	0.0375	0.05	mg/l
Nitrate	10		1.0	5.0	7.5	mg/l
Potassium			1			mg/l
Sodium			1			mg/l
Sulfate	250	(a)	5.0	187.5	250	mg/l
Total Dissolved Solids (TDS):	500	(a)	5.0			mg/l
pH:	6.5-8.5	(a)	±0.1			S.U.
Specific Conductance:			±25			usiemens/cm
Field Parameters						
Temperature:			±0.5			°Celsius
Water Elevation:			±0.01			feet - MSL

APPENDIX H

SITE HEALTH AND SAFETY PLAN

1. Items 1-9 to be completed by Project Manager.

Project Name City of Santa Fe Ortiz Park landfill Stage 1 Abatement Plan Amendment

Task Landfill closure monitoring activities including groundwater well installation and sampling.

Requested by Clay Kilmer

Proposed Start-Up Date 4/1/2010 Project/Task No. 093-80002

Prepared by/Reviewed by Health and Safety Officer

Printed Name Jeff Clark

Signature_____ Date 4/1/2010

Reviewed by Project Health and Safety Coordinator/Field Operations Leader

Printed Name Jeff Clark

Signature _____ Date 4/1/2010

Approved by Project Manager

Printed Name Clay Kilmer

Signature _____ Date 4/1/2010

Title _____Project Director

Note to Project Managers:
A signed and completed copy of the Health and Safety Plan and a signed and completed copy of the safety briefing (p. 13) must be included in the project file.

2. Project Description:

The proposed scope of services includes oversight of monitoring well drilling and performing groundwater monitoring at two closed landfill sites in the City of Santa Fe. Sampling is performed using a portable generator to power electric submersible pumps, as well as compressed inert gas-powered sampling pumps.

3. Location:

See attached site map for landfill locations.

4. Facility/Work Site Description:

See attached site descriptions.

5. Proposed Personnel and Tasks:

Project Manager Clay Kilmer

Field Team Leader Clay Kilmer, Rob Bendkowski

Proposed Field Team	Job Function/Tasks
Clay Kilmer	Coordination of all site activities including measurement of groundwater monitoring wells and collection of groundwater samples. Enforcement of HASP at the jobsite.
Rob Bendkowski	Collection of groundwater samples.

6. Confined Space Entry

A confined space is defined as any space not currently used or intended for human occupancy, having a limited means of egress, which is subject to the accumulation of toxic contaminants, a flammable or oxygen deficient atmosphere, or other hazards, such as engulfment, or electrical or mechanical hazards should equipment be inadvertently activated while an employee is in the space. Confined spaces include but are not limited to storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, air pollution control devices, smoke stacks, underground utility vaults, sewers, septic tanks, and open top spaces more than four feet in depth such as test pits, waste disposal trenches, sumps and vats.

Will this task require entry into any confined or partially confined space?

☐ YES - Describe below ☒ No

7. Cutting and Welding

Will this task involve use of a cutting torch or welding?

☐ YES - Describe below ☒ No

8. Other Potential Hazards

☒ Chemical
☐ Radiological
☐ Fire/Explosion
☒ Heat Stress
☐ Electrical
☒ Machinery/Mechanical Equipment
☒ Trips, Slips, Falls
☐ Trenching/Shoring
☒ Heavy Equipment/Vehicular Traffic
☐ Overhead Hazards
☐ Unstable/Uneven Terrain
☐ Other - Describe below

6, 7, 8 Description/Other

9. I, Clay Kilmer attest that this information is accurate to the best of my knowledge and hereby request a Health and Safety Plan for the task(s) designated above.

Signature _____ Date _____

Title_____

10. Chemical/Radiological Hazard Evaluation

Waste Media

- ☐ Airborne Contamination
- ☐ Surface Contamination
- ☐ Contaminated Soil
- ☒ Contaminated Groundwater
- ☐ Contaminated Surface Water
- ☐ Solid Waste
- ☐ Liquid Waste
- ☐ Sludge

Hazardous Characteristics

- ☒ Ignitable
- ☐ Corrosive
- ☐ Reactive
- ☐ Explosive
- ☒ Toxic (non-radiological)
- ☐ Radioactive

Substance

Groundwater monitoring tasks will involve potential of exposure to the substances listed below. Harmful concentrations are not anticipated; nevertheless, concentrations which may be hazardous to the health of the site personnel are listed below:

ESTIMATED SITE-SPECIFIC EXPOSURE HAZARD INFORMATION							
Substance/Synonym CAS No.	Maximum Contaminant Concentration Groundwater	PSTB RBSL (soil) NMWQCC standard (groundwater)	Gas/Vapor Dusts/Mists Inhalation Risk	Dermal Absorption of Solids or Liquids Risk	Skin/Eye & Respiratory System Irritation Risk	Fire Hazard Risk	Reactivity Explosion Risk
Benzene CAS No. 71-43-2	3,400 ug/L	0.02 mg/kg 10 µg/L	Low	Mod	Mod	Low	Low
Ethylbenzene CAS No. 100-41-4	2,200 ug/L	17.23 mg/kg 750 µg/L	Low	Low	Low	Low	Low
Naphthalene CAS No. 91-20-3	1,410 ug/L	0.68 mg/kg 30 µg/L (total)	Low	Low	Low	Low	Low
Toluene CAS No. 108-88-3	11,000 ug/L	2.09 mg/kg 750 µg/L	Low	Mod	Mod	Low	Low
Total Petroleum Hydrocarbons (TPH) CAS No. N.A.	NA	2200 mg/kg (diesel) None Listed	Low	Low	Low	Low	Low
Xylenes CAS No. 95-47-6	9,200 ug/L	2.91 mg/kg (total) 620 µg/L	Low	Low	Low	Low	Low

OSHA CONTAMINANT EXPOSURE INFORMATION					
Substance CAS No.	**Ionization Potential eV**	**OSHA TWA Exposure Limit**	**OSHA STEL /Ceiling Limits**	**IDLH Level**	**Target Organs**
Benzene CAS No. 71-43-2	9.24 eV	1 ppm NIOSH REL 0.1 ppm	5.0 ppm	Ca (500 ppm)	Eyes, skin, respiratory system, blood, CN system, bone marrow
Ethylbenzene CAS No. 100-41-4	8.76 eV	100 ppm (435 mg/m^3)	None Listed NIOSH STEL 125 ppm	800 ppm (10% LEL)	Eyes, skin, respiratory system, central nervous system
Naphthalene CAS No. 91-20-3	8.12 eV	10 ppm	None Listed NIOSH 15 ppm	250 ppm	Eyes, skin, central nervous system, blood, liver.
Toluene CAS No. 108-88-3	8.82 eV	OSHA 200 ppm 100 ppm* NIOSH REL 100 ppm	OSHA 300 ppm NIOSH STEL 150 ppm	500 ppm	Eyes, skin, respiratory system, central nervous system, liver, kidneys.
Total Petroleum Hydrocarbons (TPH) CAS No. N.A.	N.A.	5.0 mg/m^3 (oil mist)	None Listed	None Listed	Eyes, skin, respiratory system,
Xylenes	8.56 eV	100 ppm	150 ppm	900 ppm	Eyes, skin, respiratory system, central nervous system , GI tract, blood, liver, kidneys.

11. Ambient Air/Site Monitoring Procedures

Project includes only collection of groundwater samples from compliance monitoring well network. The wells have significant historical water quality records with no detections of significant water quality impacts that would create ambient air quality exposure risks associated with groundwater sampling; therefore no air monitoring is proposed at this time. If evidence of changed conditions is detected, this HASP will be revised appropriately.

Instrument	**Monitoring Frequency**				
___ PID (HNU, OVM) w/ 10.6 eV lamp	**Cont.**	15min.	30min.	hourly	other
___ OVA	Cont.	15min.	30min.	hourly	other
___ Combustible Gas Indicator	Cont.	15min.	30min.	hourly	other
___ H2S Detector	Cont.	15min.	30min.	hourly	other
___ Colorimetric Detector Tubes	Cont.	15min.	30min.	hourly	other
___ Other (describe below)	Cont.	15min.	30min.	hourly	other

12. Action Levels

If future site air quality impacts are detected, site personnel shall observe the following Action Levels:

Instrument	Action Level/Criteria	Specific Action
PID – Photovac, MiniRae	If the PID reading is 50.0 ppm above background level (**in breathing zone**)	Cease work and evacuate area. Upgrade to level C for emergency stabilization/demobilization purposes only. Evaluate if mechanical ventilation is feasible.
Combustible Gas	25 % LEL Any point where a source of ignition exists	Cease work, wait for air to clear.

13. Personal Monitoring

☐ Passive Dosimeter ☐ Personal Air Sampling ☐ Other

14. On-site Control

Clay Kilmer and field personnel have been designated as persons responsible to coordinate access control on the work site. No unauthorized person shall be allowed in the Exclusion Zone. Because no contamination exists at the surface of any of the well sites, the Exclusion Zone has been designated as the immediate areas where subsurface work is planned and in the area where injury could occur from mechanical equipment and machinery.

16. Personal Protective Equipment

Location	Job Function/Task	Initial Level of Protection
Exclusion/Hot Zone	Well sampling (upgrade to level C for emergency stabilization/demob only)	D B C D 1 2 3 other
Decon/Contamination Control & Support Zone	Decontamination or personnel and/or equipment	D B C D 1 2 3 other

List the specific protective equipment and material (where applicable) for each of the Levels of Protection identified above

Level C ☒ - Emergency stabilization and demobilization only

☐ Half face air purifying respirator with organic vapor cartridges in combination with dust and mist filters
☒ Full face air purifying respirator with organic vapor cartridges in combination with dust and mist filters
☐ Full face canister Air Purifying Respirator
☒ Disposable, full body protective clothing
☒ Hard hat, steel toed boots, safety glasses
☒ Ear protection during drill rig operation
☒ Double latex gloves
☐ Outer NBR (Nitrile Butyl Rubber) gloves
☒ Boot covers

Level D ☒
☒ Standard work clothes
☒ Hard hat, steel toed boots, safety glasses
☒ Ear protection during drill rig operation
☒ Latex gloves
☐ Outer NBR gloves

Where air purifying respirators are authorized (Level C - emergency stabilization/demobilization), organic vapor cartridges in combination with dust and mist filters are the appropriate respiratory protection equipment for use with the specific substances and concentrations anticipated. Level C will only be implemented to stabilize the site for demobilization in the event conditions exist which prevent working in Level D. If Level C is required, cartridges will be replaced after use.

No changes to the specified levels of protection shall be made without the knowledge and approval of the health and safety officer/field operations leader and the Project Manager.

17. Decontamination

Personnel and equipment leaving the Controlled Zone shall proceed through the following decontamination stations and procedures from the decontamination zone:

LEVEL D PERSONNEL DECONTAMINATION	
Station	**Procedure**
Decontamination	Decon boots, remove latex gloves, hard hat, safety glasses, and hearing protection, wash face and hands prior to leaving Decontamination area.

EMERGENCY LEVEL D PERSONNEL DECONTAMINATION	
Station	**Procedure**
Decontamination	Wash/rinse and/or remove all clothing that has contacted excessively contaminated soil/groundwater if possible. If not possible, wrap person in blanket or plastic to minimize contamination to other personnel. Alert emergency medical personnel regarding potential contamination, instruct as necessary. A person familiar with the site and the incident should accompany the contaminated employee to the hospital.

EQUIPMENT DECONTAMINATION	
Station	**Equipment & Procedure**
Decontamination	Visqueen, Alquinox, potable water, deionized/distilled water, wash tub/basin, brushes, isopropanol rinse and catch basin. Scrub all spoons, bowls, hand augers or other sampling equipment with brush potable water to loosen all soil. Then further scrub using a brush and a tap water/Aliquinox mixture, then rinse with deionized or distilled (DI) water. The equipment is then sprayed with a light mist of isopropanol allowed to air dry then sprayed again with the isopropanol mist. Equipment is allowed to air dry, if practical, otherwise a final DI water rinse is to be performed prior to further use.

IDW: Since no action-level contamination has been detected in any monitor well to date, all purge water will be disposed on ground surface and allowed to evaporate. If action-level contamination is discovered in water samples from any well, purge water from that well will be containerized, transported and disposed of according to regulatory requirements.

18. Confined Entry Procedures ☒ Not Applicable

Yes	N/A		Yes	N/A	
☐	☐	Provide Forced Ventilation	☐	☐	Refer to Personal Protective Equip. (#16)
☐	☐	Test Atmosphere For	☐	☐	Refer to Emergency Procedures (#29)
☐	☐	(a) $\%O_2$	☐	☐	Other Special Procedures
☐	☐	(b) %LEL			
☐	☐	(c) Other			

Descriptions/Other:

19. Cutting/Welding Procedures ☒ Not Applicable

Yes	N/A	
☐	☐	Relocate or Protect Combustibles
☐	☐	Wet Down or Cover Combustible Floor
☐	☐	Check Flammable Gas Concentrations (%LEL) in air
☐	☐	Cover Wall, Floor, Duct and Tank Openings
☐	☐	Provide Fire Extinguisher

Other Special Instructions:

20. On-site Organization and Coordination

Project Manager: Clay Kilmer

Field Team Leader: Rob Bendkowski

Site Safety Officer: Clay Kilmer and Rob Bendkowski

21. Special Instructions

In addition to the potential volatile, and/or inorganic contaminants listed in the tables in Section 9, workers should also be cognizant of hazards such as heat stress and working around vehicles or other equipment. To ensure compliance and understanding of safety issues, a pre-job safety meeting will be conducted at the job site prior to commencement of work activities. Attendance by all workers is mandatory, and a Pre-Job Safety Briefing form will be signed by everyone in attendance of the safety meeting.

22. Sanitation Requirements

Potable water supply available on work site?	☐ Yes ☐ No – See site specific details.
Portable toilets required on work site?	☐ Yes, how many?
	☒ No
Temporary washing/shower facilities required at work site?	☐ Yes, describe below.
	☒ No

23. Field Procedures Change Authorization

Instruction Number ___ Duration of Authorization Requested ___ Date:

to be changed ☐ Today only

☐ Duration of Task

Description of Procedures Modification:

Justification:

Person Requesting Change:	**Verbal Authorization Received From:**
Name	Name Time
Title	Title
Signature	Approved By (Signature of person named above to be obtained within 48 hours of verbal authorization)

24. Emergency Procedures (This page is to be posted at prominent location on site)

Yes No

☐ ☒ On-site Communications Required? Emergency Channel:

Nearest Telephone: Cellular Phone with Golder personnel

Fire and Explosion

In the event of a fire or explosion, if the situation can be readily controlled with available resources without jeopardizing the health and safety of yourself, the public, or other site personnel, take immediate action to do so, otherwise:

1. Notify emergency personnel by calling 911.
2. If possible, isolate the fire to prevent spreading.
3. Evacuate the area.

Chemical Exposure

Site workers must notify the site health and safety officer immediately in the event of any injury or any of the signs or symptoms of overexposure to hazardous substances identified below:

EXPOSURE/FIRST AID INFORMATION		
Substances Present	**Symptoms of Acute Exposure**	**First Aid**
Benzene CAS No. 71-43-2	Irritation of eyes, skin, nose, resp. system, giddiness, headache, nausea, staggered gait, fatigue, anorexia, lassitude, dermatitis, bone marrow depression	Eye: Irrigate immediately Skin: Soap/water wash immed. Inhalation: Respiratory support Swallow: Immed. medical attention
Ethylbenzene CAS No. 100-41-4	Irritation, headache, dermatitis, narcosis, coma	Eyes: Water irrigation immediately Skin: Water flush promptly Inhalation: Respiratory support Swallow: Immed. medical attention
Naphthalene CAS No. 91-20-3	Irritation, headache, confusion, excitement, malaise, nausea, vomiting, abdominal pain, dermatitis	Eyes: Water irrigation immediately Skin: Soap/water wash promptly Inhalation: Respiratory support Swallow: Immed. medical attention
Toluene CAS No. 108-88-3	Irritation, fatigue, weakness, confusion, euphoria, dizziness, headache, dilated pupils	Eyes: Water irrigation immediately Skin: Soap/water wash promptly Inhalation: Respiratory support Swallow: Immed. medical attention
Total Petroleum Hydrocarbons (TPH) CAS No. N.A.	Eye, skin, respiratory system irritation	Eyes: Water irrigation immediately Skin: Soap/water wash promptly Inhalation: Respiratory support Swallow: Immediate medical attention
o, m, p, Xylenes (o) CAS No. 95-47-6 (m) CAS No. 108-38-3 (p) CAS No. 106-42-3	Irritation, dizziness, excitement, drowsiness, incoherence, staggering gait, nausea, vomiting	Eyes: Water irrigation immediately Skin: Soap/water wash promptly Inhalation: Respiratory support Swallow: Immed. med. attention

Heat Illness/Stress

Site workers must notify the site health and safety officer immediately in the event of any personnel exhibiting heat illness/stress symptoms.

On-site Injury or Illness

See attached site-specific directions.

Personnel With First Aid/CPR Training (Names)

Required Emergency Back-Up Equipment

Fully charged ABC Class fire extinguisher. (Must have when drilling.)

First Aid Kit.

Emergency Response Authority

Clay Kilmer or Steven Schindler are the designated site emergency coordinator and has final authority for first response to on-site emergency situations.

Upon arrival of the appropriate emergency response personnel, the site emergency coordinator shall defer all authority but shall remain on the scene if necessary to provide any and all possible assistance. At the earliest opportunity, the site safety officer or the site emergency coordinator shall contact the project coordinator or health and safety officer.

Project Manager Clay Kilmer	Phone (w) 505/821-3043	(m) 505-235-4482
Health and Safety Coordinator Clay Kilmer	Phone (w) 505/821-3043	(m) 505-235-4482
Health and Safety Officer Jeff Clark	Phone (w) 505/821-3043	(h) 520-834-6339

25. Safety Briefing

The following personnel were present at pre-job safety briefing conducted at _____ (time) on (date) at _____ (location), and have read the above plan and are familiar with its provisions:

Name	Signature

Fully charged ABC Class fire extinguisher available on site? ☐ YES

Fully stocked First Aid Kit available on site? ☐ YES

All project personnel advised of location of nearest phone? ☐ YES

All project personnel advised of location of designated medical facility or facilities? ☐ YES

_____
Printed Name of Field Team Leader or Site Safety Officer

_____
Signature Date

Paseo de Vista and Ortiz Park Landfills

SANTA FE, NEW MEXICO

Site Name: **Paseo de Vista, Ortiz Park**		**Location:** Paseo de Vista Bkvd, Santa Fe, NM	
		Telephone: (505)	**Project No:**
Company	**Point of Contact**	**Title**	**Telephone**
City of Santa Fe	Lawrence Garcia	Solid Waste Compliance Manager	(505) 955-2220
Golder Associates	Clay Kilmer	Project Manager	(505) 821-3043
Golder Associates.	Rob Bendkowski	Site Safety Coordinator	(505) 821-3043

Medical Emergency

Hospital Name: St Vincent Hospital

Hospital Address: 455 St Michaels Dr, Santa Fe NM

Hospital Telephone: Emergency - *

General - (505) 983-336

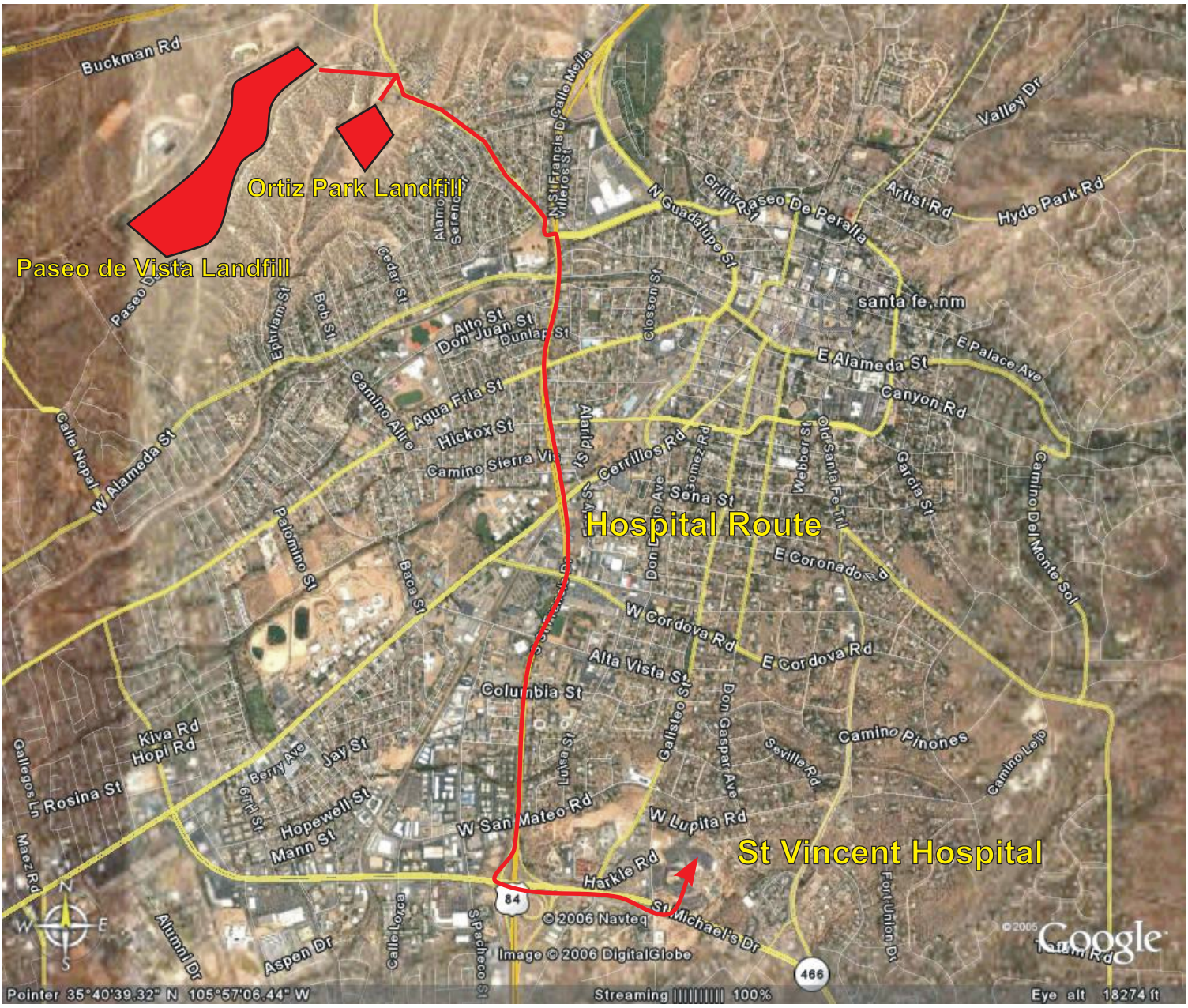
Ambulance Telephone: (505) 887-1888

Route to Hospital: (See next page for route map)

Police Department Telephone: (505) 428-3710

Fire Department Address: 200 Lincoln Ave, Santa Fe, NM

Fire Department Telephone: (505)


Ortiz Park Landfill
Paseo de Vista Landfill
Hospital Route
St Vincent Hospital
Buckman Rd
Valley Dr
Hyde Park Rd
Artist Rd
Paseo De Peralta
N Guadalupe St
Griffin St
N St Francis Dr
Calle Mejia
Villeros St
Alamo Serena
Cedar St
Bob St
Ephriam St
Alto St
Don Juan St
Dunlap St
Closson St
santa fe, nm
E Alameda St
E Palace Ave
Canyon Rd
Camino Alire
Agua Fria St
Hickox St
Camino Sierra Vista
Calle Nopal
W Alameda St
Alarid St
Cerrillos Rd
Don Luis Ave
Gomez Rd
Sena St
Webber St
Old Santa Fe Trl
Garcia St
Camino Del Monte Sol
E Coronado Rd
Palomino St
Baca St
W Cordova Rd
E Cordova Rd
Alta Vista St
Columbia St
Gallisteo St
Don Gaspar Ave
Seville Rd
Camino Pinones
Camino Lejo
Kiva Rd
Hopi Rd
Gallegos Ln
Rosina St
Berry Ave
Jay St
67th St
Luisa St
Hopewell St
Mann St
W San Mateo Rd
W Lupita Rd
Maez Rd
Harkle Rd
St Michael's Dr
Fort Union Dr
Alumni Dr
Aspen Dr
Calle Lorca
S Pacheco St
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