6280 Brookshire Drive, Rocklin, CA 95677 Tel: (916) 415-1134, FAX: (916) 415-1154

December 4, 2007

Mr. Jerry Wickham
Alameda County -Environmental Health Services Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: ***Conceptual Remedial Action Work Plan***
Tesoro Station No. 67107
(Former Beacon Station No. 3721)
44 Lewelling Boulevard
San Lorenzo, California
RDM Project No. 02-67107

Dear Mr. Wickham:

On Behalf of Tesoro Petroleum Companies (Tesoro), RDM Environmental Inc. (RDM) and Haley & Aldrich (H&A) are submitting the following Conceptual Remedial Action Work Plan to the Alameda County Environmental Health Department (ACEHD). The location of the site is presented in Figure 1, and the site detail map with well locations is included in Figure 2. This Work Plan is being submitted at the request of the ACEHD in its letter dated 27 September 2007. A copy of the ACEHD letter is included in Enclosure A.

Site Conditions

The petroleum hydrocarbon-impacted ground water related to the site is present in the upper water bearing zone approximately 12 to 15 feet below surface grade (bsg). In general, the southwestern edge of the plume appears to be impacted by persistent levels of TPH-g and MTBE. The petroleum hydrocarbon concentrations over the past several quarters have shown a decreasing trend suggesting the plume is attenuating naturally.

Field and laboratory parameters for monitored natural attenuation (MNA) have been collected since August of 2006. It is known that the compounds present degrade intrinsically under aerobic conditions. MNA data indicates that natural attenuation is occurring at the site; however, the data also indicates that this is an oxygen-limited environment.

Detailed site condition information and MNA data can be electronically accessed on the Tesoro Companies Sharepoint website (https://portal.haleyaldrich.com/sites/ext/San Lorenzo).

Oxygen Injection System

RDM and H&A propose that an oxygen injection system be installed along the southwestern corner of the property. The objective of installing this system is to raise dissolved oxygen concentrations in the core of the plume. Higher levels of oxygen will enhance natural attenuation

processes and increase degradation rates, moving the site towards closure. The location of the system will create a cut-off boundary that would inhibit any additional off-site migration.

The proposed work includes one pilot test point installed near well RW-2 (Figure 3). A standard two-inch well will be installed in the prepositioned well box OS-1. The well will be advanced to a depth of 30 feet (bsg). A *Solinst®Waterloo Emitter*™ will be installed within this well to inject oxygen at a flow rate of 1-2 milliliters per minute via direct diffusion using low density polyethylene (LDPE) tubing. The design of these units allows for in-situ monitoring and produces no waste. This is a preferable and sustainable method due to its ease of use, effectiveness and the low cost of operation. The *Solinst®Waterloo Emitter* information package is included in Enclosure B.

Background dissolved oxygen levels will be collected from OS-1 and surrounding wells prior to the installation of the injection system and then monitored once injection is initiated to determine the radius of influence. The dissolved oxygen will be monitored on a regular basis (site specific) throughout the test event. This information will be used to determine appropriate locations for and density of additional injection points around the southwest corner of the site (Figure 3).

Petroleum Fingerprinting

Recent reports from Kiff Analytical Laboratory have called into question the source of petroleum-impacted groundwater southwest of the site (MW-10, MW-11 and MW-12). These reports indicate that the TPH compounds detected in these wells are not typically those found in gasoline. In an effort to verify the source of these compounds, RDM and H&A propose petroleum fingerprint analysis be done on both on-site and off-site wells for comparison. We propose collecting groundwater samples from wells MW-3R and RW-2 (on-site) and MW-10, MW-11 and MW-12 (off-site) and sending them to Zymax Laboratory, in San Luis Obispo, California, for analysis.

The interpretations contained in this report represent our professional opinions and are based, in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

If you have any questions concerning this project, please contact Richard Munsch at (916) 415-1134.

RDM ENVIRONMENTAL, INC.

Richard D. Munsch
Project Manager

Michael G. Lee, P.E.
California Registered Civil Engineer No. C055795

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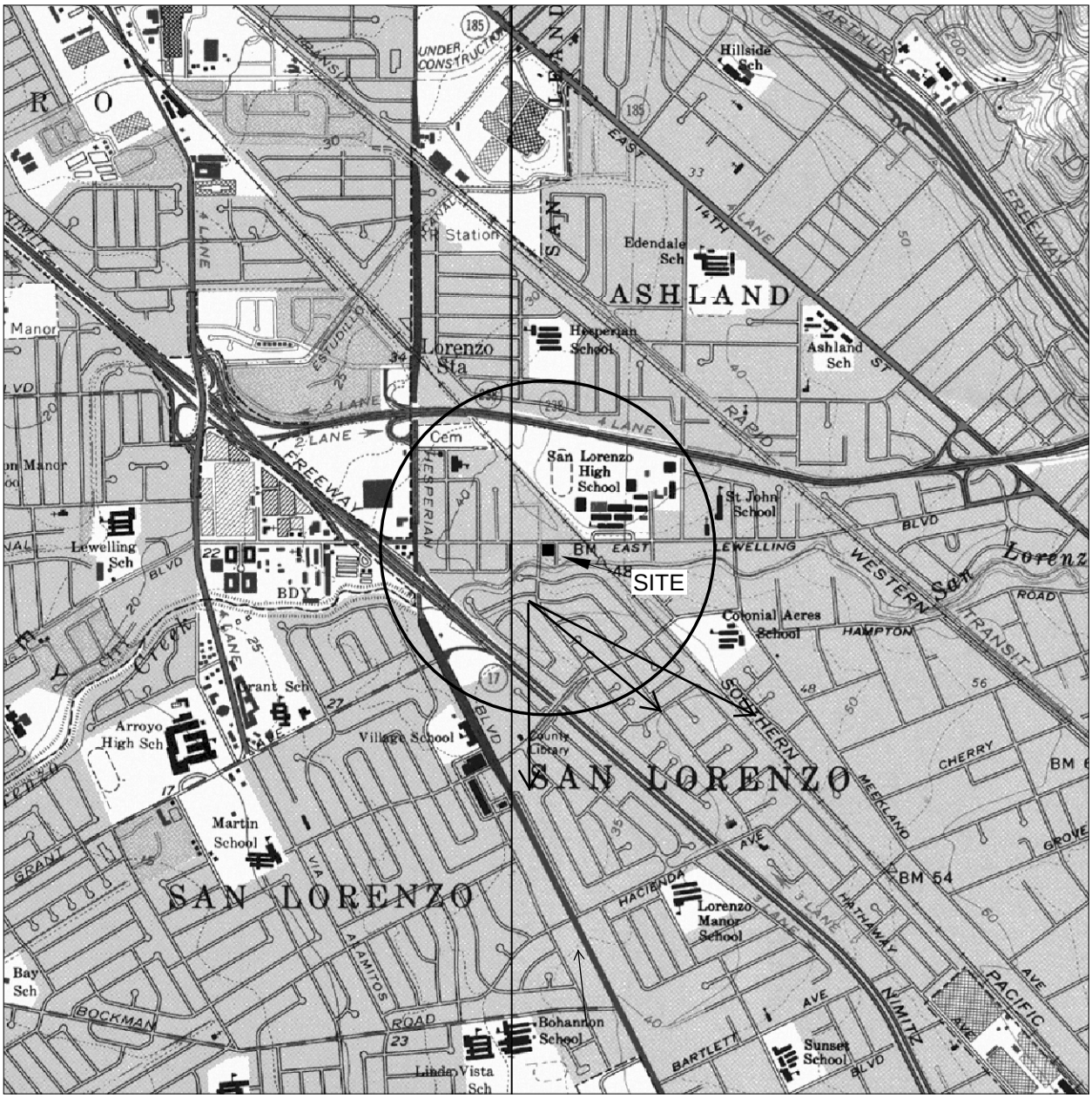
Enclosures:

- Enclosure A: Copy of the ACEHD 27 September 2007 Letter



T.3 S.

R.2 W.

GENERAL NOTES:
BASE MAP FROM U.S.G.S.
HAYWARD, CA.
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1980

QUADRANGLE LOCATION

SCALE 1:24,000

FIGURE 1
SITE LOCATION MAP
TESORO STATION NO. 67107
(FORMER BEACON STATION NO. 3721)
44 LEWELLING BOULEVARD
SAN LORENZO, CA.

PROJECT NO. 00-3721	DRAWN BY M.L. 12/15/00
FILE NO. 00-3721-1A	PREPARED BY RDM
REVISION NO. 1	REVIEWED BY

R D M Environmental

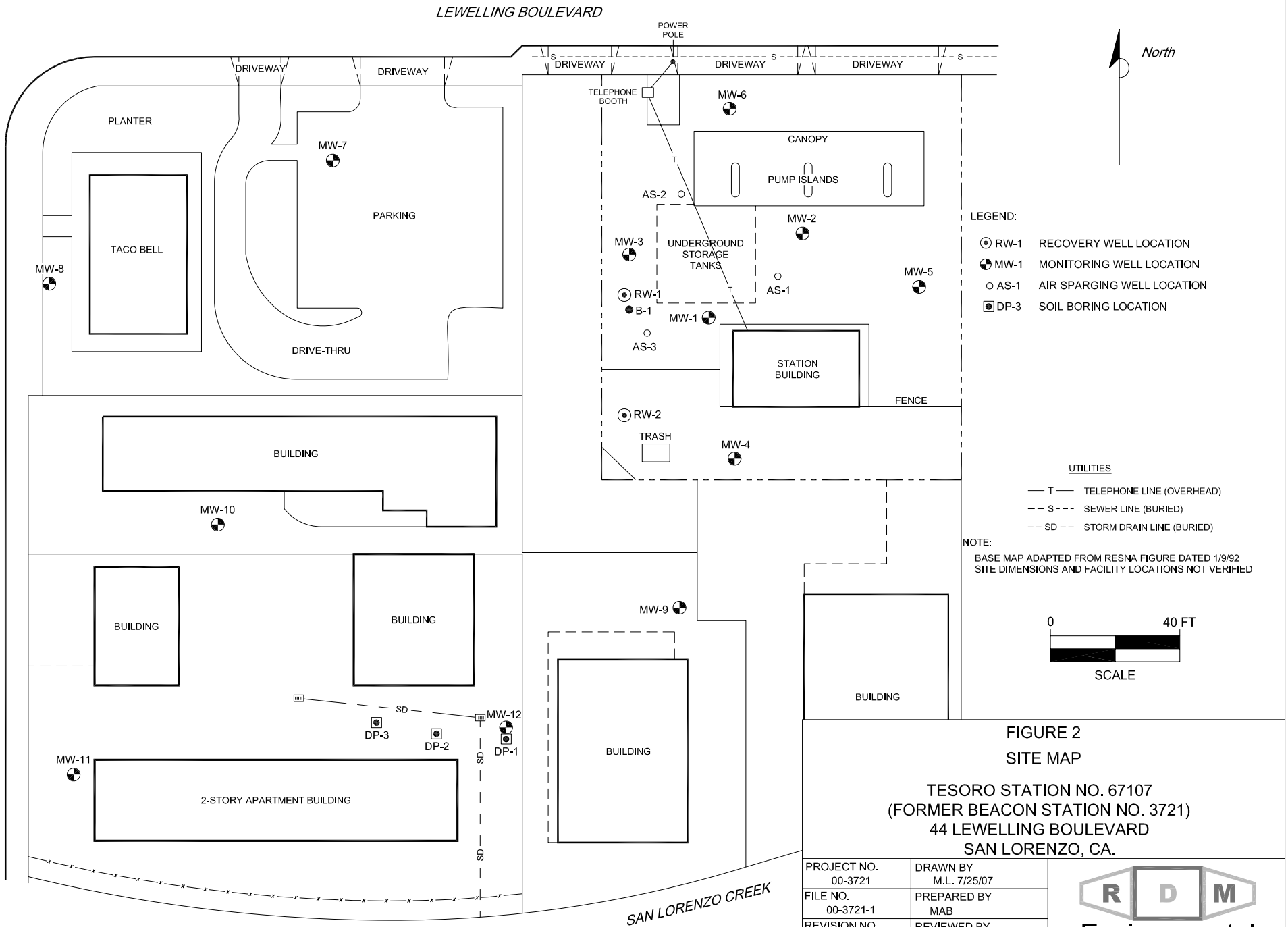


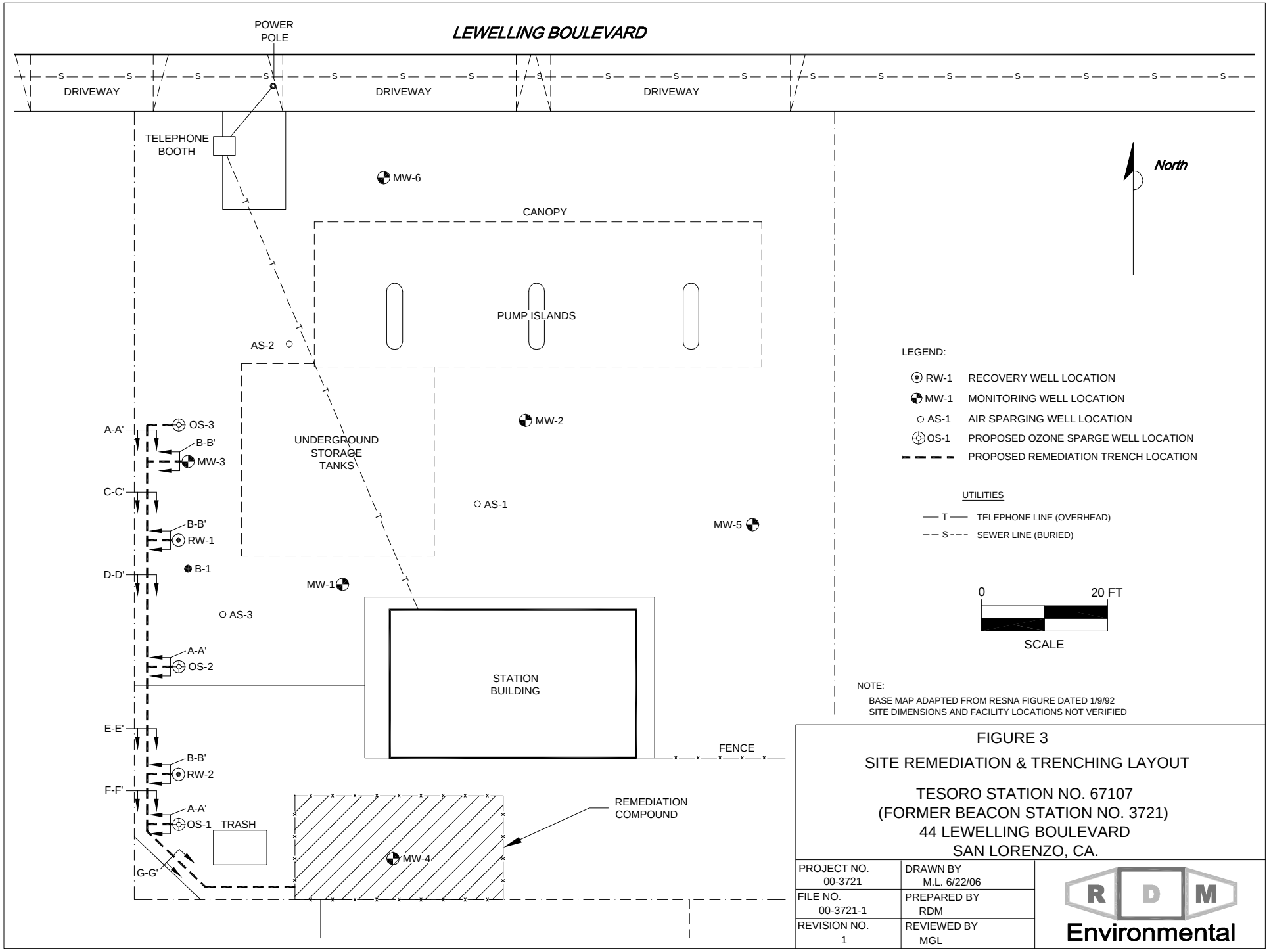
FIGURE 2

SITE MAP

TESORO STATION NO. 67107
(FORMER BEACON STATION NO. 3721)
44 LEWELLING BOULEVARD
SAN LORENZO, CA.

PROJECT NO. 00-3721	DRAWN BY M.L. 7/25/07
FILE NO. 00-3721-1	PREPARED BY MAB
REVISION NO. 4	REVIEWED BY

R D M Environmental



NOTE:

BASE MAP ADAPTED FROM RESNA FIGURE DATED 1/9/92
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED

FIGURE 3

SITE REMEDIATION & TRENCHING LAYOUT

TESORO STATION NO. 67107
(FORMER BEACON STATION NO. 3721)
44 LEWELLING BOULEVARD
SAN LORENZO, CA.

PROJECT NO. 00-3721	DRAWN BY M.L. 6/22/06
FILE NO. 00-3721-1	PREPARED BY RDM
REVISION NO. 1	REVIEWED BY MGL

R D M Environmental

ENCLOSURE A

A Copy of the ACEHD 27 September 2007 Letter

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

September 27, 2007

Mr. Jeffrey Baker
Tesoro Petroleum Companies, Inc.
3450 S. 344th Way, Ste. 100
Auburn, WA 98001-5931

Mr. Sam Hirbod
Hirbod Enterprises
111 Deerwood Road, Suite 110
San Ramon, CA 94583

Subject: Fuel Leak Case No. RO0000498 and Geotracker Global ID T0600101414, Beacon #721, 44 Lewelling Blvd., San Lorenzo, CA 94580

Dear Mr. Baker:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above-referenced site including the recently submitted documents entitled, "Monitoring Well MW-12 and Soil Borings DP-1 through DP-3 Installation Report," dated August 27, 2007 and "Second Quarter 2007 Groundwater Monitoring/ Remediation Status Report," dated August 15, 2007. The "Monitoring Well MW-12 and Soil Borings DP-1 through DP-3 Installation Report," dated August 27, 2007 presents the results of soil and groundwater sampling from three soil borings and one monitoring well. The "Second Quarter 2007 Groundwater Monitoring/ Remediation Status Report," dated August 15, 2007 presents results from groundwater sampling conducted on April 30, 2007 and operation of the groundwater extraction system. The report also presents recommendations for improvements to the groundwater recovery system.

We request that you address the following technical comments, perform the proposed work, and send us the technical reports requested below.

TECHNICAL COMMENTS

1. **Groundwater Monitoring.** We concur with the recommendation to add monitoring well MW-12 to the quarterly groundwater monitoring program. Please present monitoring results in the reports requested below.

2. **Measurement of Water Levels in Well RW-1.** No water level measurements are presented for well RW-1 during the April 30, 2007 water level gauging. On Table 1 of the Second Quarter 2007 Groundwater Monitoring/ Remediation Status Report, the depth to water in RW-1 is listed as "Dry," although a groundwater sample was collected from the well. Well RW-1 is the deepest well at the site and is currently not being pumped. Therefore, it seems unlikely that well RW-1 would be dry. Please include water levels for RW-1 in future

groundwater monitoring reports, as the data are useful for assessing the effects of pumping wells MW-3R and RW-2.

3. **Extent of Capture Zone.** The Second Quarter 2007 Groundwater Monitoring/Remediation Status Report indicates that groundwater levels were measured with the recovery system operating to determine the extent of the capture zone from pumping of wells MW-3R and RW-2. The report also indicates that pumping affected water levels observed in MW-1 and MW-10, indicating that the re-configured pumping wells are having an effect on downgradient groundwater migration. In the Third Quarter 2007 Groundwater Monitoring/Remediation Status Report requested below, please explain what observations or data provided the basis for concluding that water levels in wells MW-1 and MW-10 were affected. It should also be noted that drawdown and capture are not the same. Drawdown is the change in water levels that is calculated by subtracting the water level under pumping from the water level without pumping. Capture zone refers to the region that contributes groundwater to an extraction well. Drawdown occurs over a larger distance in the downgradient direction than capture.

4. **Increase in Concentration of TPHg in Groundwater from Downgradient Well MW-11.** TPHg was detected in groundwater collected from well MW-11 at a concentration of 930 µg/L on February 2, 2007 and 740 µg/L on April 30, 2007. These TPHg concentrations were the highest concentrations measured from well MW-11 since 1998. This increase in TPHg concentrations at the downgradient edge of the plume is not consistent with a stable or decreasing plume.

5. **Addition of Well RW-1 to Groundwater Extraction System.** Although we have no objection to an evaluation of adding well RW-1 to the groundwater extraction system to improve system performance, we do not concur with the addition of well RW-1 as the only additional remedial effort. Please see technical comment 6 below regarding additional remedial alternatives.

6. **Additional Remedial Alternatives.** We concur with the recommendation to evaluate the addition of ozone or oxygen injection to increase contaminant degradation rates at the site. Please include a proposal to supplement or replace the existing groundwater extraction system in the Remedial Action Work Plan requested below.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **November 9, 2007** – Third Quarter 2007 Groundwater Monitoring and Remediation Status Report
- **December 6, 2007** – Remedial Action Work Plan
- **February 10, 2008** – Fourth Quarter 2007 Groundwater Monitoring and Remediation Status Report

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program ftp site are provided on the attached "Electronic Report Upload (ftp) Instructions." Please do not submit reports as attachments to electronic mail.

Submission of reports to the Alameda County ftp site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. Submission of reports to the Geotracker website does not fulfill the requirement to submit documents to the Alameda County ftp site. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitor wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

If you have any questions, please call me at (510) 567-6791.

Sincerely,

Jerry Wickham
Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Richard Munsch
RDM Environmental
6280 Brookshire Drive
Rocklin, CA 95677

Michael Nickelsen
Haley & Aldrich
200 Town Centre Drive, Suite 2
Rochester, NY 14623

Donna Drogos, ACEH
Jerry Wickham, ACEH
File

ENCLOSURE B

Solinst® Waterloo *Emitter* Information Package

Solinst® Waterloo Emitter™ Installation Instructions

Model 703

The Waterloo EmitterTM is based on the principle of diffusion (US Patent: 5,605,634), therefore groundwater gases (e.g. CO_2, CH_4, etc.) can back-diffuse across the tubing membrane. This lowers the partial pressure of the remediation gas (e.g. oxygen), causing the performance of the units to drop-off over time. To mitigate this effect, it is necessry to periodically purge the units of these groundwater gases.

Purging the units is simple and can be accomplished in either of the following ways. The gas line configuration can utilize an On/Off valve, to allow manual purging from time to time. This shut-off valve will need to be opened once per week to allow a flow of gas for 5-10 seconds to purge the units of any accumulated groundwater gases.

Alternatively, the system vent line can be configured utilizing an adjustable flow needle valve. This allows a small flow (1-2 ml/min) of remediation gas constantly through the units, to passively purge the system. A constant purge of gas at 1-2 ml/min does not significantly increase overall gas usage. (See Figure 1 for gas supply connection guidelines.)

A simulation calculator for the Waterloo Emitter is available in Microsoft Excel for downloading from www.solinst.com. The Calculator allows the input of your application's specifics and will estimate the output of oxygen through diffusion into the aquifer as well as the oxygen supply consumption rate.

Plan View of Oxygen Line Plumbing for a Row of 5 Waterloo Emitters

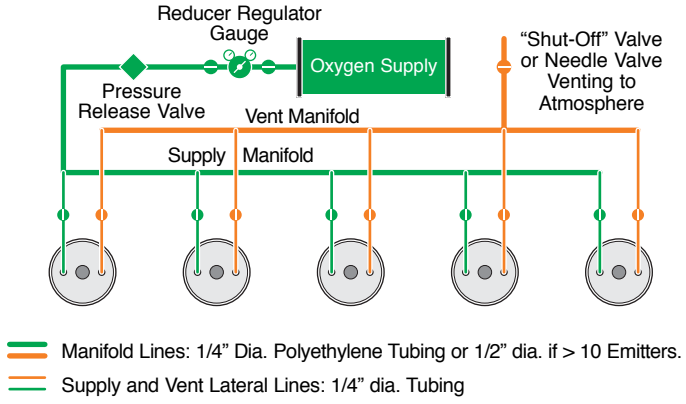


Figure 1

1. Visually inspect parts for any damage. Each container includes: 1 Waterloo Emitter unit, 4 x 1/4" brass compression fitting nuts with ferrules, 1 short length of red LDPE tubing loop and 4 spare plastic dura-clamps. Note that 5.8" Emitters and all Emitters using LDPE tubing do not use dura-clamps.
2. Select one end of Waterloo Emitter to be the "bottom end" (i.e. the end that will reside deepest in the treatment well).
3. Attach 1/4" LDPE tubing loop with supplied 1/4" brass compression fittings to be the "bottom end" of the unit. (See ③ Figure 2).

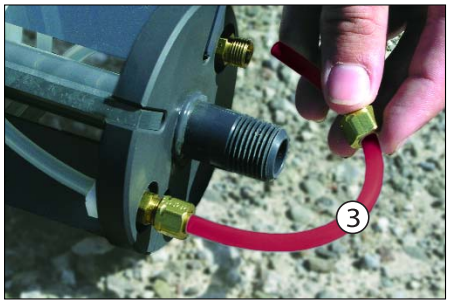


Figure 2

Figure 3

4a. If sampling within Emitter wells is required, attach lengths of PVC riser casing. Note that 1.8" and 3.8" Emitters use 1-1/4" NPT pipe; 6" Emitters use 1-1/4" NPT pipe.

4b. If sampling within the Waterloo Emitter well is NOT required, attach a lowering/retrieval cord to the unit by threading a cap over the top end of the NPT threaded central pipe (See ④ Figure 3).

5. Attach appropriate lengths of 1/4" O.D. polyethylene gas transfer line to extend from the top end 1/4" fittings on the Emitter (See ⑤ Figure 3) to the gas supply and vent manifolds.
6. Referring to Figure 1, make sure the vent line valve or needlevalve is closed and make sure all other valves are open. Set pressure regulator to the appropriate operating pressure.

MAXIMUM PRESSURE
Set Pressure Relief Valve at:
LDPE Tubing: 100 psi, Silicone Tubing: 20 psi
DAMAGE TO TUBING WILL OCCUR IF MAXIMUM PRESSURES ARE EXCEEDED.

7. Prior to submersing the units in the treatment wells, while the system is under pressure, leak test all fittings (either submerse the units in a water bath or soap test the connections). Adjust fittings as necessary to eliminate any leaks prior to installation.
8. Lower the unit to desired depth within the screened treatment well and secure retrieval cord or riser pipe at the well head.
9. While NOT exceeding above specified maximum pressures, adjust pressure regulator to desired operating pressure. For systems utilizing a constant purge of the vent line, adjust the needle-valve to allow 1-2 ml/min of flow.

Pressure Tested: ☐ **Serial No:** _____
Leak Tested: ☐

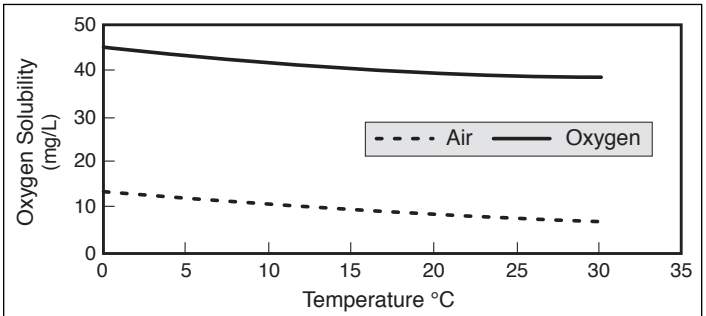
Date: _____ **Signed:** _____

Installation Components Required

- Waterloo Emitter™
- NPT drop pipe or suspension line with plug
- 1/4" LDPE tubing to extend from Emitter to supply
- Oxygen Supply - Medical grade or Extra-dry oxygen
- Oxygen regulator for supply tank
- Reducer regulator and gauge to allow setting pressures at:
  2 - 20 psi (silicon tubing)
  10 - 100 psi (LDPE tubing)
- Tubing manifold if more than one Emitter is to be supplied from the same oxygen tank
- Shut-off valve or needle valve for system purging

Length of Tubing per Waterloo Emitter™	
1.8" dia.	62 ft.
3.8" dia.	75 ft.
5.8" dia.	150 ft.

Waterloo Emitter Tubing Specs	
Diffusion Coefficient (silicone)	6.67E-07 cm2/s
Diffusion Coefficient (LDPE)	1.73E-08 cm2/s



Oxygen Solubility in Water (Air vs. Pure Oxygen)

Oxygen Consumption Estimates

Waterloo Emitter Equipped with Silicone Diffusive Tubing Volume consumed (L/day/Emitter)			
P (psi) (regulator)	1.8" x 51" Emitter	3.8" x 51" Emitter	5.8ß" x 51" Emitter
5	1.68	2.07	4.14
10	2.11	2.59	5.19
15	2.53	3.12	6.24
20	2.96	3.64	7.29

Waterloo Emitter Equipped with LDPE Diffusive Tubing Volume consumed (L/day/Emitter)			
P (psi) (regulator)	1.8" x 51" Emitter	3.8" x 51" Emitter	5.8" x 51" Emitter
60	0.17	0.20	0.41
70	0.19	0.23	0.46
80	0.21	0.26	0.52
90	0.23	0.28	0.57
100	0.25	0.31	0.62
110	0.28	0.34	0.68

Typical Oxygen Tank Specifications			
Old Designation	New Designation	Tank Size	Maximum Volume (litres)
B	M6	3" x 12"	164
C	M9	4" x 11"	248
D	M15	4.5" x 16"	400
E	M22	4.5" x 25"	680
G	M60	7.5" x 23"	1725
H		8" x 51"	6500
K		9" x 60"	8720

Notes:
- Tank volume may vary based on manufacturer and tank material
- Tanks can be steel, aluminum or composite
- Steel and aluminum tanks are typically 2/3 the volume of composite tanks
- Depending on the output pressure required, the available oxygen volume may range from 70% - 90% of the maximum tank volume.

Printed in Canada
June 20, 2006

For further information contact: Solinst Canada Ltd.
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Web Site: www.solinst.com E-mail: instruments@solinst.com

Solinst®