

APPENDIX K

SUNQUEST PORPERTIES, INC.
150 EXECUTIVE PARK BLVD.,
SAN FRANCISCO, CA 94134

April 24, 2001

Air Division
U.S. EPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105

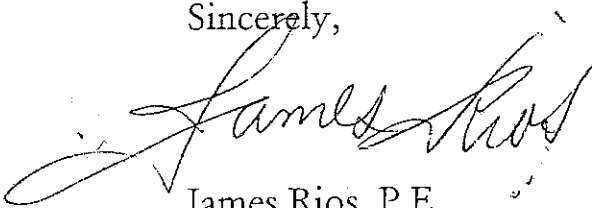
Subject: Transmittal of the Collection and Control System Design
Plan for the Brisbane Landfill, Brisbane California

Ladies and Gentlemen:

The Bay Area Air Quality Management District has instructed us to forward a copy of our Collection and Control System Design Plan to your Division. Attached is a copy of the plan.

If you have any questions on the plan call me at 415-468-6676 Ext. 114.

Sincerely,



James Rios, P.E.
Environmental Consultant

cc: Ted Peng, Vice President, Sunquest
Hari S. Doss, BAAQMD

**COLLECTION AND CONTROL SYSTEM
DESIGN PLAN**

APPLICATION No. 2407

**FOR THE BRISBANE LANDFILL, PLAN No. 5691
BRISBANE , CALIFORNIA**

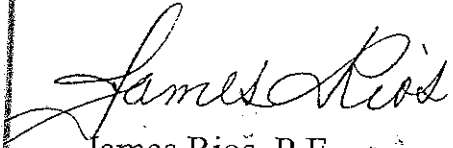
April 18, 2001

**Prepared for:
Sunquest Properties, Inc.
150 Executive Park Blvd.
San Francisco, CA 94134**

**Prepared by James Rios,
Environmental Consultant
29 Windward Drive
Corte Madera, CA 94925
415-924-4782**

CERTIFICATION

The data contained in this report are based on the design of the Gas Collection System by Kleinfelder and the investigations by consulting firms such as Kleinfelder, Mandeville & Associates, SCS Engineers, and Hydrological Consultants, Inc. In addition the data is based on my 10 years of experience in operating the gas collection system and personal observations at the Brisbane Landfill.



James Rios, P.E.
Environmental Consultant for
Sunquest Properties, Inc.



CONTENTS

1.0	INTRODUCTION	P. 1
1.1	Site History	P. 1
1.2	Design Plan Checklist (Maps)	P. 1
	1.2.1 Current and Projected Fill Areas For Wastes	P. 1
	1.2.2 Segregated Areas for Non-Degradable Wastes	P. 1
	1.2.3 Non-Productive Areas	P. 2
	1.2.4 Current Gas Collection System Component Locations	P. 2
2.0	LANDFILL GAS COLLECTION SYSTEM	
2.1	Life of Gas Collection System	P. 3
2.2	Gas Generation Flow Rate During Life Of The GCS	P. 3
2.3	Size of Blower	P. 3
2.4	Justify Density of GCS Components	P. 4
2.5	Construction Materials and Sizes	P. 5
2.6	Other Design Issues	P. 6
3.0	ALTERNATIVES TO STANDARDS	P. 6
4.0	LANDFILL GAS CONTROL SYSTEM	P. 6
4.1	Flare (A-1)	P. 6
4.2	Current Emission Control Limits	P. 7
5.0	MONITORING REQUIREMENTS	P. 8
5.1	Current Flow Rate Monitoring	P. 8
5.2	Current Temperature Monitoring	P. 8

5.3	Cover Integrity Monitoring Plan	P. 9
5.4	Monthly Wellhead Monitoring Plan	P. 10
5.5	Results of Latest Surface Emission Scan	P. 11
5.6	Landfill Surface Monitoring Plan	P. 12

Appendix A

Sketch A & B Flare Dimensions

FIGURES

Figure 1.	Site Location Map
Figure 2.	Site Plan – Methane Recovery System
Plate 2	Site Exploration Map (KCA Engineers)
Figure 3	Site Layout (GeoSyntec)
Figure 4	Site Plan – North – GCS (Kleinfelder)
Figure 5	Site Plan – South – GCS (Kleinfelder)
Figure 6	Methane Gas Generation Curve
Figure 7	P & ID of the Flare Station
Figure 6	Flare Vertical Dimensions
Figure 8	OVA Surface Survey (HCI) 10/30 – 11-1, 1989
Figure 9	Brisbane Landfill Surface Emissions Monitoring (Kleinfelder)
Figure 10	Modified Drawing Surface Emission Monitoring (Mandeville & Associates)
Figure 11	OVA Surface Survey (April 17, 2001) (modified HCI)

COLLECTION AND CONTROL SYSTEM DESIGN PLAN
APPLICATION NO. 2407
FOR THE
BRISBANE LANDFILL PLANT NO. 5691
BRISBANE, CALIFORNIA

1.0 INTRODUCTION

This report is submitted by Sunquest Properties, Inc. in order to comply with Regulation 8, Rule 34, Section 408, EPA 40CFR Part 60.725(b)(2)(i) and 40CFR Part 62.14356 (a)(1).

1.1 Site History

The Brisbane Landfill is a 275-acre landfill within the City limits of Brisbane, CA, in San Mateo County. Refer to Site Location Map Fig. 1 (GeoSyntec). The landfill is a closed landfill that opened in 1933 and received municipal solid waste from the City and County of San Francisco. It has not accepted decomposable refuse since 1967. After landfilling of municipal solid waste was discontinued in 1967, a cover of soil was placed over the site. Subsequently, and continuing to the present day, additional clean soil fill has been placed over much of the site for land reclamation.

It has a landfill gas collection system (GCS) which was constructed under BAAQMD Application No. 5109 and has been in operation since March of 1991. Refer to Fig. 2 Site Plan -- Methane Recovery System Brisbane Landfill, CA as prepared by Kleinfelder (April 26, 1991).

1.2 Design Plan Checklist (Maps)

1.2.1 Current and Projected Fill Areas for Wastes

The Brisbane Landfill has been closed and has not accepted any decomposable refuse since 1967. The areas that were filled in from 1933 to 1967 are shown on Plate 2, KCA Engineers, Inc. Site Exploration Map. Refuse was deposited first in Area 1, then Area 2 and finally in Area 3. Also refer to Fig. #3, Site Layout Map by GeoSyntec Consultants for the layout of the landfill.

1.2.2 Segregated Areas for Non-Degradable Wastes

At the time the Brisbane Landfill was in use, there was no segregation for wastes. The landfill was used to receive municipal solid waste from the City and County of San Francisco. The volume of waste placed at the landfill is estimated to be 12.5 million cubic yards, which works out to approximately 7 million tons based on an assumed compaction density of 1,100 pounds per cubic yard. The legal agreement between the City of Brisbane and the Sanitary Fill Company that operated the landfill specified the conditions under which refuse could be accepted at the Brisbane Landfill. The document defined refuse as all waste and discarded material from dwelling places, households, apartment houses, stores, office buildings, restaurants, hotels, governmental and private institutions and all commercial establishments, including waste or discarded food, animal and vegetable matter from all kitchens thereof, waste paper, cans, glass, ashes and boxes, cuttings from trees, lawns and gardens.

1.2.3 Non-Productive Areas

A gas collection system was installed throughout the landfill and no areas were excluded as non-productive.

1.2.4 Show Current Gas Collection System Component Locations

Refer to Fig. 4 (Sh.C-2) and Fig. 5 (Sh. C-2A) Site Plan North and South, which show the current Gas Collection System (GCS) component locations. Each gas collection well is identified as a vertical (VW) or horizontal (HW) with a letter and number. The B wells are located on the western border of the landfill and the A wells on the eastern border. The locations of condensate tanks (CT) are identified by a triangle within a circle and are appropriately numbered, i.e. CT-A5 or CT-B5. The location of the Flare Station is in the northwestern corner of the landfill and identified on Fig 4.

2.0 LANDFILL GAS COLLECTION SYSTEM

2.1 Life of Gas Collection System

The Brisbane Landfill GCS has been in operation for approximately 10 years with no visible sign of wear. With on going maintenance the GCS should have a total life of 20 to 30 years.

2.2 Gas Generation Flow Rate During The Life Of The GCS

In the GCS Design Report for the Brisbane Landfill as prepared by Kleinfelder and submitted to the BAAQMD (May 1990) there is a computer generated methane production curve. Refer to Fig. 6 - Methane Gas Generation Curve, which projects gas generation from 1950 to 2010. From the curve it can be seen that most of the generation of methane gas has already taken place, since the refuse has been buried wet for 34 to 60 years. Therefore, the landfill is near the end of the generation cycle with the present methane gas generation flow in the range of 10 to 100 SCFM. The operating records indicate that the methane production rate is approximately 40 SCFM, which is, near the middle of the high and low projected generation curves of Fig. 6.

2.3 Size of Blower

The gas blower is a Lamson Corporation Model 854 GD, with 4 stages with a direct drive 50 HP electric motor. The blower has a maximum capacity of approximately 1600 SCFM. A variable speed drive is used to control the motor speed. It is normally operated at 33 % of maximum capacity.

This blower has proven to be highly reliable, having operated 10 years without any breakdown. The only maintenance besides greasing has been to change the motor coupling recently.

2.4 Justify Density of GCS Components

Refuse Depth – Following common practice of the day, refuse was dumped directly into San Francisco Bay on top of the Bay Mud. Highway 101 was constructed immediately east of the site in 1948 and was built on engineered rock and soil fill. The landfill's southern boundary at the Brisbane lagoon was extended by construction of an earth dike. Generally the base of the landfill (top of Bay Mud) is at an elevation of – 25 feet mean sea level (msl). The depth of the refuse ranges from 10' minimum to 35' maximum. The existing cap consists of from 7 to 22 feet of compacted soil and averages over 10 feet.

Gas Generation Rates – Refer to Section 2.2

Justify Density of GCS – Kleinfelder, Inc. designed the GCS as per their Design Report for the Brisbane Landfill dated May 1990 and submitted to and approved by the BAAQMD. The design was in compliance with Federal and State Agency requirements. The two significant design objectives were to control methane gas at the perimeter of the property to less than 5% and limit volatile organic compound emissions from the landfill. Refer to Figures 4 and 5 - for the layout of the GCS. The landfill cover in 1990 was already fairly tight since the maximum OVA reading during the survey conducted on May 24, 1990 was 30 ppm. Because of the low probe pressures and low surface emissions no interior gas wells were included in the GCS design. Since 1990 several feet have increased the cover, due to ongoing deposit of clean fill as part of the land claiming operations.

The justification of the GCS design is in its successful operation over the past 10 years. Monitoring of perimeter gas probes from June 1991 to April of 1996 has always been non-detect for methane gas. The gas probe measurements were made with a GasTech Model 1939-OX hydrocarbon analyzer on the 5% by volume gas scale. The generation (flow) of methane gas has decreased from 140 SCFM in 1992 to approximately 40 SCFM in Feb. of 2001. In addition the surface

emission scan carried out on April 30 1992 indicated that during operation of the GCS there are no detectable emissions from the landfill. Even after 24 hours of shut-down of the GCS a surface emission scan carried out on May 6, 1992 indicated that there were no detectable emissions from the landfill except at the drainage creek, where up to 20 ppm of OVA were found in several rabbit holes. It is not unexpected to find some traces of OVA (< 20ppm) emanating from the drainage creek since the ground cover over the refuse is shallow in this area.

2.5 Construction Materials and Sizes

The gas collection system header was installed around the perimeter of the landfill with most of the header installed above the ground. The header was composed of 6", 8", 10" and 12" segments, constructed of Sch. 40 PVC. The vertical and horizontal gas collection wells were also constructed of Sch. 40 PVC. The horizontal wells (4" dia PVC) were embedded in two feet of 1 1/2" to 3" crushed rock and covered with a plastic liner with 2' of soil on top. Because the depth to groundwater is shallow, the horizontal wells are located approximately 3'BG. The vertical wells, since they are located at the perimeter where the depth to groundwater are greater, range from 11' to 19' and are constructed of 3" PVC (Sch. 40).

The underground gas collection wells are constructed of PVC, which is expected to provide a long life (30 years). The PVC pipes are located above the refuse and groundwater and are surrounded by crushed rock therefore they are not subjected to refuse decomposition heat, nor to a harsh environment. All gas collection wells have their own shut off valve and a sample cock. Inspection of the above ground piping after 10 years of operation indicates that it has withstood quite well to the elements and appears to be able to last another 20 years.

The underground and below grade piping is protected at road crossings with 15" dia. corrugated galvanized iron tubes.

The design of the system is such as to minimize any air intrusion. A soil mixture of 26% bentonite was used at the underground to ground transition points of the horizontal wells. Plastic was placed over the crushed rock surrounding the underground collection wells. Bentonite seals were used on the vertical wells. Several feet of compacted clean soil, which is still being deposited as part of an on going land claiming operation, have increased the entire landfill cover.

2.6 Other Design Issues

Ten years of operating experience indicate that the system will not require any future expansion. The condensate collected in 1,000 gallon condensate collection tanks was analyzed several years ago and found to be of high purity, containing neither volatile organic compounds nor any hazardous chemicals. The level in the condensate tanks are measured periodically and when found to be high, the tanks are pumped out to the drainage ditches.

The landfill is presently closed in accordance with the federal and state regulations of the time. Development of the site is considered for the future and at that time the closure design will take into account any necessary modifications to the existing collection system.

3.0 ALTERNATIVES TO STANDARDS

The existing wellhead design for all of the gas collection wells have proven to perform adequately, therefore no alternative standards are proposed nor required.

4.0 LANDFILL GAS CONTROL SYSTEM

4.1 Flare (A-1)

The abatement device for the Brisbane Landfill GCS is a single flare. Refer to Figure 7 for the P & ID of the Flare Station.

Location and general specifications of the flare station are as follows:

Location: 601 Tunnel Ave., Brisbane, CA, behind the Sierra Pt. Lumber Yard. Refer to Fig. 4 for location on Site Plan.

Plant No.: BAAQMD Plant # 5691

Abatement

Device No.: A-1

Owner/Operator: Sunquest Properties, Inc., 150 Executive Park Blvd., San Francisco, CA 94134

Flare Model: Sur-Lite Corp. 10 Million BTU, Refer to Sur-Lite Sketches A & B for flare dimension.

Capacity: Maximum heat input – 10 Million BTU/hr,
maximum landfill gas flow – 1,100 SCFM

4.2 CURRENT EMISSION CONTROL LIMITS

The flare destruction efficiency for organic compounds shall not be less than 98%. The combustion temperature of the flare is to be maintained at a minimum of 1400 degrees F. No modifications or physical changes are required to meet these limits. The check on combustion efficiency was carried out in 1991 and found to be over 98% and a temperature low limit switch on the flare temperature recorder automatically shuts the system down if the temperature falls below 1400 F.

Additional emission control limits include that the flare must be operated at least 7 hours per day except for those days where the main header methane gas concentration falls below 20% by volume which corresponds to 1400 F, or the LFG flow rate falls below 250 CFM at the blower discharge.

Exhaust temperature limits – 1400 F minimum and 2050 F maximum. The minimum temperature is set by the BAAQMD in our operating permit. The maximum temperature is dictated by the materials of construction of the thermocouple, which has a maximum temperature rating of 2200 F.

5.0 MONITORING REQUIREMENTS

5.1 Current Flow Rate Monitoring

The current gas flow rate-monitoring device consists of an orifice and a differential pressure indicator. The flow rate is then read from a chart converting the differential pressure readings to flow as SCFM. A variable speed drive controller that sets the speed of the blower motor usually sets the flow rate. Therefore the flow stays fairly constant, and is read once a week or whenever the control setting is changed.

In addition the flow to the inlet of the flare is periodically checked with a Kurz Instruments, Inc. model 4418 air velocity meter, which is quite accurate. This instrument is used to check the accuracy of the differential gauge readings.

To comply with 40 CFR 60.756(b)(2) a gas flow recorder will be installed prior to July 1, 2002.

5.2 Current Temperature Monitoring

The flare temperature is recorded continuously by means of a thermocouple connected to a state of the art Honeywell Model DR4500A Turbine Circular Chart Recorder set for recording over 7 days. The recorder continuously records the day, time and temperature of the flare during operation. A low alarm contact set at 1400 F sends a signal to shut down the blower and other components of the flare system if the temperature falls to 1400 F or less. A high alarm contact shuts the flare system down if the temperature reaches 2050 F.

An operator checks the temperature recorder chart every weekday and on weekends if an alarm condition develops. The recorder provides a record of duration of the LFG flare on a daily basis, which is then transposed by the operator to a log. On any day that the LFG flare system operates less than 7 hrs. per day the methane concentration and LFG flow rate are measured and recorded.

5.3 Cover Integrity Monitoring Plan

According to Rule 8 Regulation 34 Section 119 and Section 506 which provides a limited exemption for an "inactive or closed landfill", the landfill surface has not been monitored on a regular basis.

The emissions from the Brisbane Landfill were very low prior to installing a gas collection system. Hydrological Consultants, Inc. (HCI) conducted instantaneous surface monitoring over a 3-day period in Oct./Nov. of 1989. Refer to Fig. 8 OVA Surface Survey map for the Brisbane Landfill by HCI (10/30-11/1/89) and note that most of the OVA readings over the entire landfill were in the range of 5-16 ppm. Greater than 0.2 % level measurements were detected at the southern perimeter of the landfill adjacent to the lagoon and in parts of the interior northwestern, central and southeastern sector of the landfill where extreme settlement had taken place. Kleinfelder Consultants, Inc. had the site operator spread and compact native soil over the identified seep areas prior to carrying out another instantaneous surface emissions survey over these same areas in May 24, 1990. The results of the survey are shown on Fig. 9 (Kleinfelder) Brisbane Landfill Instantaneous Surface Emissions Monitoring Sheet 1 of 1. The results in all three areas were readings of less than 3 ppm TOC as methane except for three readings in the northwestern grid and these were 30 ppm or less.

After installation of the GCS surface emission monitoring were carried out by SCS Engineers, Inc. in April and May of 1992 (4/30/92, 5/5/92 & 5/6/92). Refer to Fig. 10 - modified MA drawing No. E1005-78-0005A for the results of the SCS Engineers surface emission monitoring. Surface sweeps were carried out during gas collection and 90-minutes and 24 hours after turning off the GCS blower. Surface sweeps of the southern perimeter adjacent to the lagoon, an area that had registered in the % by volume range during the 1989 tests, were found to be non-detect. The rest of the surface emission scan results indicate that there are no detectable emissions, except for the rabbit holes along the drainage ditch, and the highest OVA reading there was 100 ppm.

5.4 Monthly Wellhead Monitoring Plan

There are a total of 26 vertical wells and 28 horizontal wells that will be monitored monthly. Refer to Figures 4 and 5 for location and designation.

Sixteen of the vertical wells are located on the east side of the landfill and are designated VW-A1 to VW-A16, another ten vertical wells are located on the west side of the landfill and are designated VW-B1 to VW-B10. Fourteen horizontal wells are located on the east side of the landfill and are designated HW-A1 to HW-A14, another fourteen horizontal wells are located on the west side of the landfill and are designated HW-B1 to HW-B14.

The well heads will be monitored for Methane and oxygen gas concentration in % by volume using a GasTech Landfill Monitor Model 1939OX. This analyzer measures methane gas from 0-100% by volume from a set of thermal conductivity filaments, and for the 0-5% methane gas by volume range a heated catalytic platinum element is used. Oxygen is measured by an electrochemical cell and reads in % by volume. The analyzer has a built in pump to continuously draw a sample.

Vacuum measurements will be carried out monthly at the wellheads, utilizing two differential pressure gauges. The gauges are Dwyer Instruments, Inc model Magnehelic with one gauge reading differential pressure in the range of 0-0.5 inches of water and the second gauge reading in the range of 0-10 inches of water.

5.5 Results of Latest Surface Emission Scan

To assure the regulatory agencies that the Brisbane Landfill emissions are now even lower than they were before, due to the continued increase of ground cover thickness, a surface emission scan was carried out on April 17, 2001.

The latest surface emission survey was carried out by James Rios, Sunquest's Environmental Consultant on April 17, 2001. The results are shown on Fig. 11 with the new results superimposed on the results of Hydrological Consultants, Inc. (HCI) OVA surface survey of Oct. 30 to Nov. 1, 1989. The survey was carried out with a Foxboro OVA Model 128 portable analyzer, which was serviced and calibrated by Southern Cross//West on April 9, 2001. A copy of Southern Cross//West's invoice is attached as Appendix A. The Foxboro analyzer is a hydrogen flame ionization detector for monitoring total hydrocarbons. It has three ranges: 0 to 10 ppm, 0-100 ppm and 0 to 10,000 ppm. The sample probe was lowered to 1" above the ground and a reading taken. The weather conditions were good and the air was calm.

The surface emission scan was carried out after having shut down the gas collection system for 16 hours. To determine the areas to be scanned, Fig. 10 Mandeville & Associates Modified Brisbane Site Map Surface Emission Monitoring was used as a guide. The modified drawing shows the path taken by SCS Engineers to perform the surface emission scans of April 30th, May 5th and 6th of 1992. These paths were selected by SCS Engineers on the basis that in 1987 there had been OVA readings of 200 to 1,000 ppm immediately east of the tank farm; OVA readings of 600 to > 1,000 ppm in the drainage ditch

area along the eastern boundary of the Brisbane Landfill adjacent to Route 101; and along the south side of the Brisbane Landfill bordering the lagoon since in 1987 this area had cracks along the dike that registered > 1,000 ppm; and OVA readings of 150 to > 1,000 ppm in the drainage channel that runs from west to east down the middle of the drawing.

The April 17, 2001 surface scan confirmed SCS Engineers scan results of May 5 and 6, 1992, resulting in none-detect VOC values adjacent to the lagoon, the south western section of the landfill adjacent to Tunnel Ave., none-detect VOC values in the ditch running from the middle north to end of the landfill adjacent to Freeway 101. In the drainage channel that runs from west to east down the middle of the landfill all values were none-detect except for one rabbit hole reading of < 3 ppm (2.8 ppm).

5.6 Landfill Surface Monitoring Plan

According to Rule 8 Regulation 34 Section 119 a limited exemption for inactive/closed landfills provides that the requirements of Section 506 shall not apply to landfills that last received waste before Nov. 8, 1987 and which have no design capacity available for future waste deposition. On this regulatory basis and the fact that the Brisbane Landfill has been proven to be a very tight landfill by past surface sweeps, there are no plans to monitor the surface any further.

SOUTHERN CROSS// WEST
 P.O BOX 670
 BIGFORK, MT 59911-0670
 1 (800) 360-6358 FAX (406) 837-2898

Appendix A

Invoice

DATE	INVOICE#
------	----------

04/09/2001	2205
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BILL TO:

SUNQUEST PROPERTIES INC
 JAMES RIOS
 150 EXECUTIVE PARK BLVD STE 4200
 SAN FRANCISCO, CA 94134

SHIP TO:

CUST PICK UP

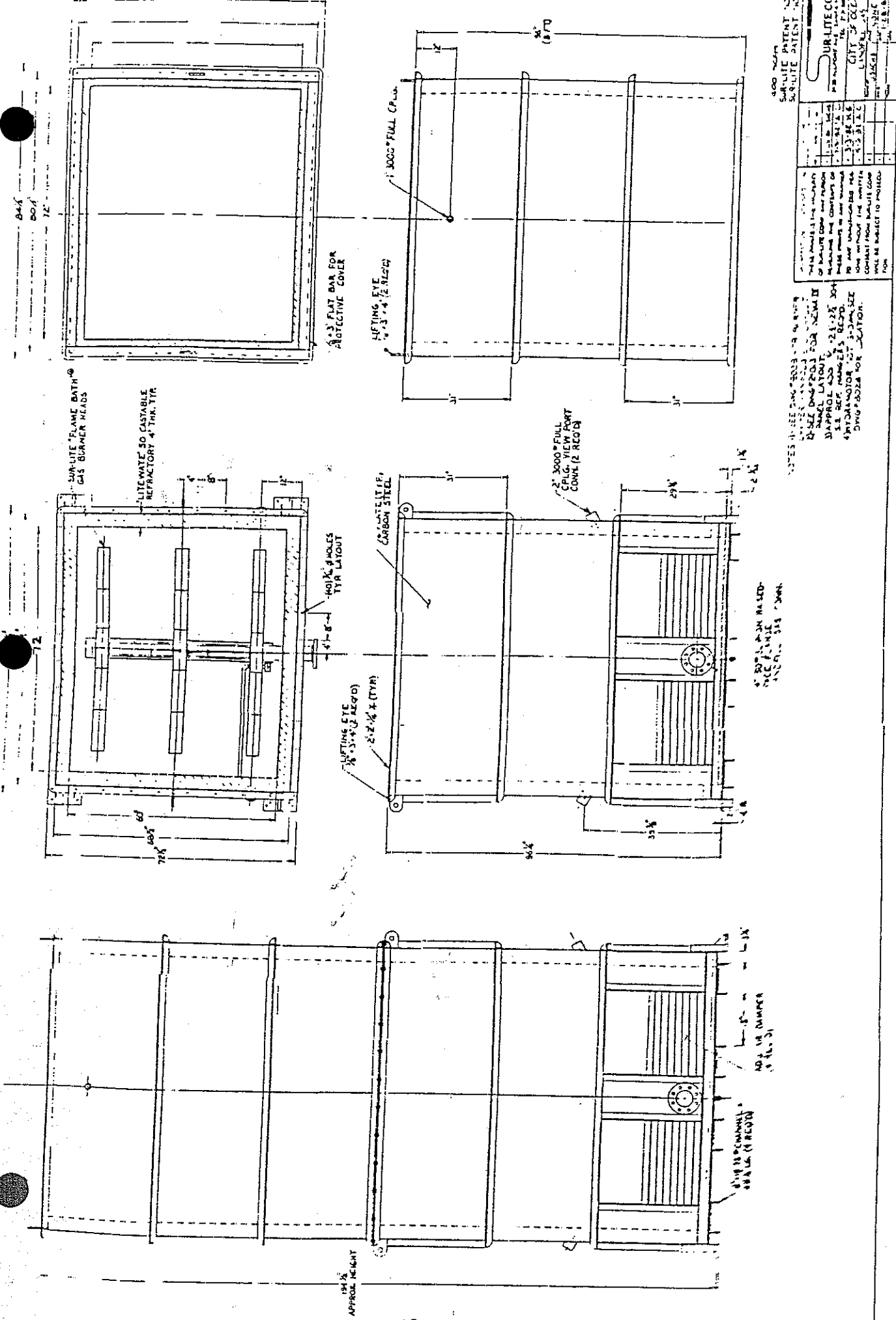
PO-NUMBER	TERMS	REP	SHIP	VIA	F.O.B.	PROJECT
3674	Due on receipt	AME	04/09/2001	UPS	HAYWARD	SO 4120

QUANTITY	ITEM CODE	DESCRIPTION	PRICE EACH	AMOUNT
2	027	INST REPAIR OVA 128 S/N 41098	4.88	9.76T
1	206	FILTER EXHAUST BATTERY, STD OVA	395.00	395.00T
	LABOR	FOXB FINISHED GOOD FIF REPAIR	95.00	190.00
		Sales Tax	8.00%	32.38

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TOTAL \$627.14



400 NORTH
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 SUR-LITE PATENT NO. 12

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 PITTSBURGH, PA.
 CITY OF PITTSBURGH
 LICENSE NO. 111111
 ALL RIGHTS RESERVED

SEE DIMENSIONS FOR FULL
 SIZE DIMENSIONAL DRAWING
 DIMENSIONAL DRAWING FOR
 APPROX. ADD. 21-22 304
 11 SEE NUMBER'S RECD.
 4 HYDRA-MOTOR 27 3-2 304 SEE
 DIMENSIONS FOR LOCATION.

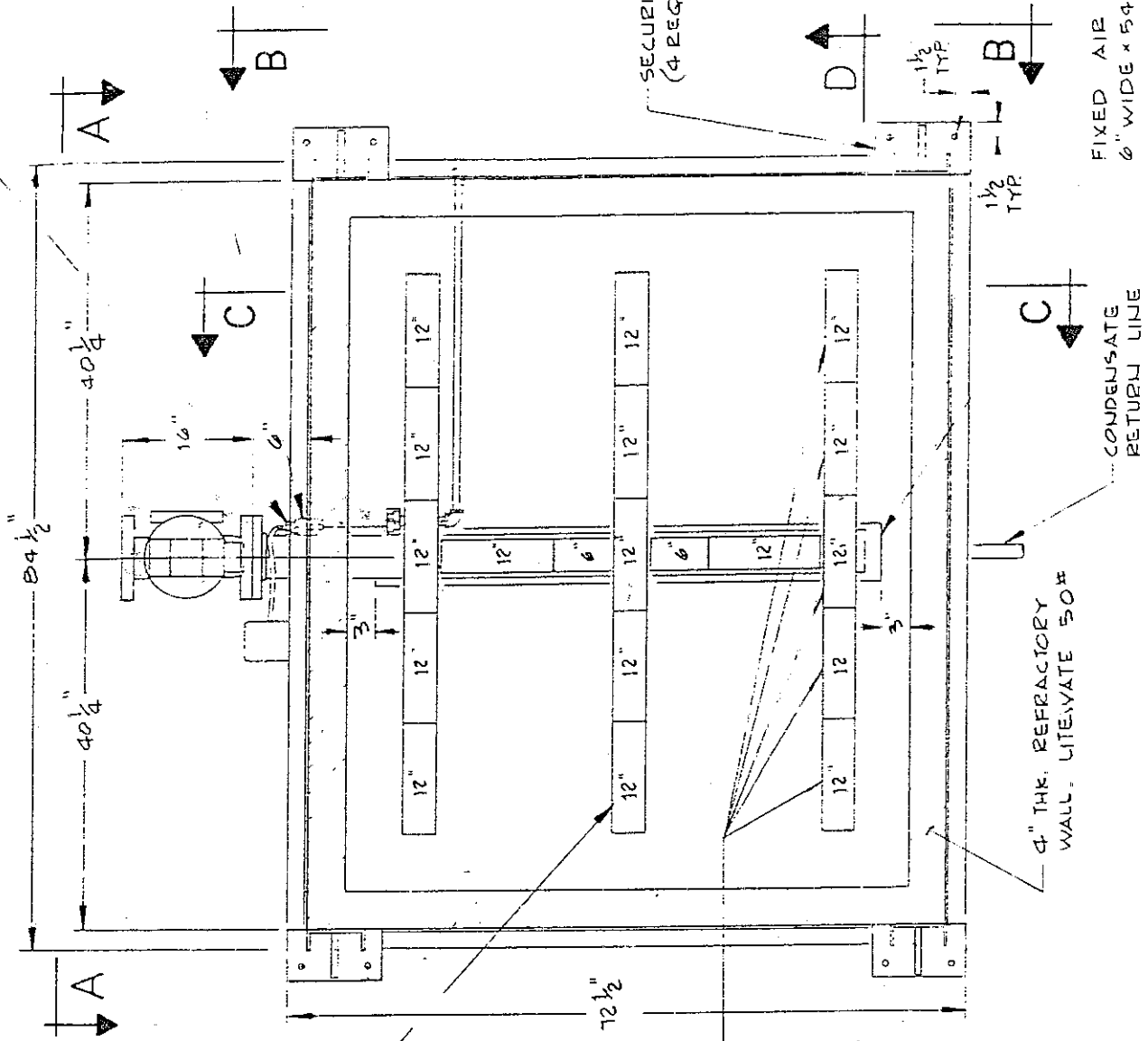
4 3000° FULL CP. LUB.
 VIEW PORT CONE (2 RECD)

4 3000° FULL CP. LUB.
 VIEW PORT CONE (2 RECD)

SUR-LITE SKETCH A

SPARK IGNITOR
TB-68716

1" 3000#
1 1/2" 12EI
SPARK



SUR-LITE "FLAME BATH"
GAS BURNER TEE
HEADER (TYP.)

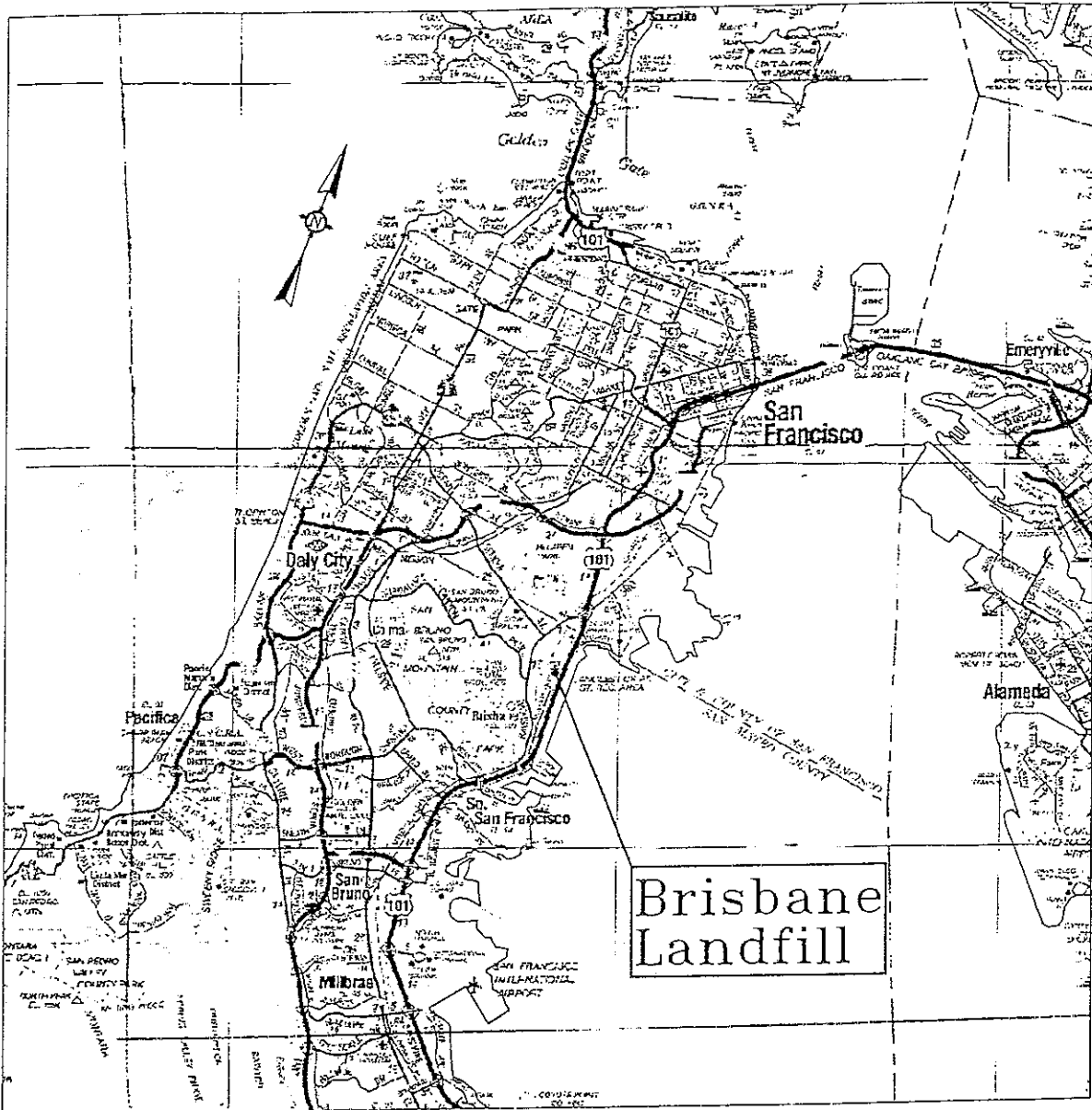
1/2" THICK, REFRACTORY
WALL, LITENATE 50#

CONDENSATE
RETURN LINE

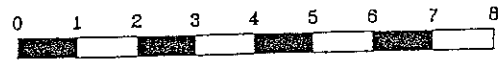
FIXED AIR INLET
6" WIDE x 54" LONG.

SECURING LEGS
(4 REQ'D)

Sur-Lite Sketch B



Brisbane Landfill



Approximate Scale: Miles

SITE LOCATION MAP FIG. 1

SUNQUEST WD0295 MAP2.DWG



GEOSYNTEC CONSULTANTS

PROJECT: IDENTIFICATION OF PROPERTY OWNERS
AND DELINEATION OF LANDFILL FOOT PRINT
BRISBANE LANDFILL, BRISBANECALIFORNIA

FIGURE NO.	1
PROJECT NO.	WD0295
DATE:	6 APRIL 2000

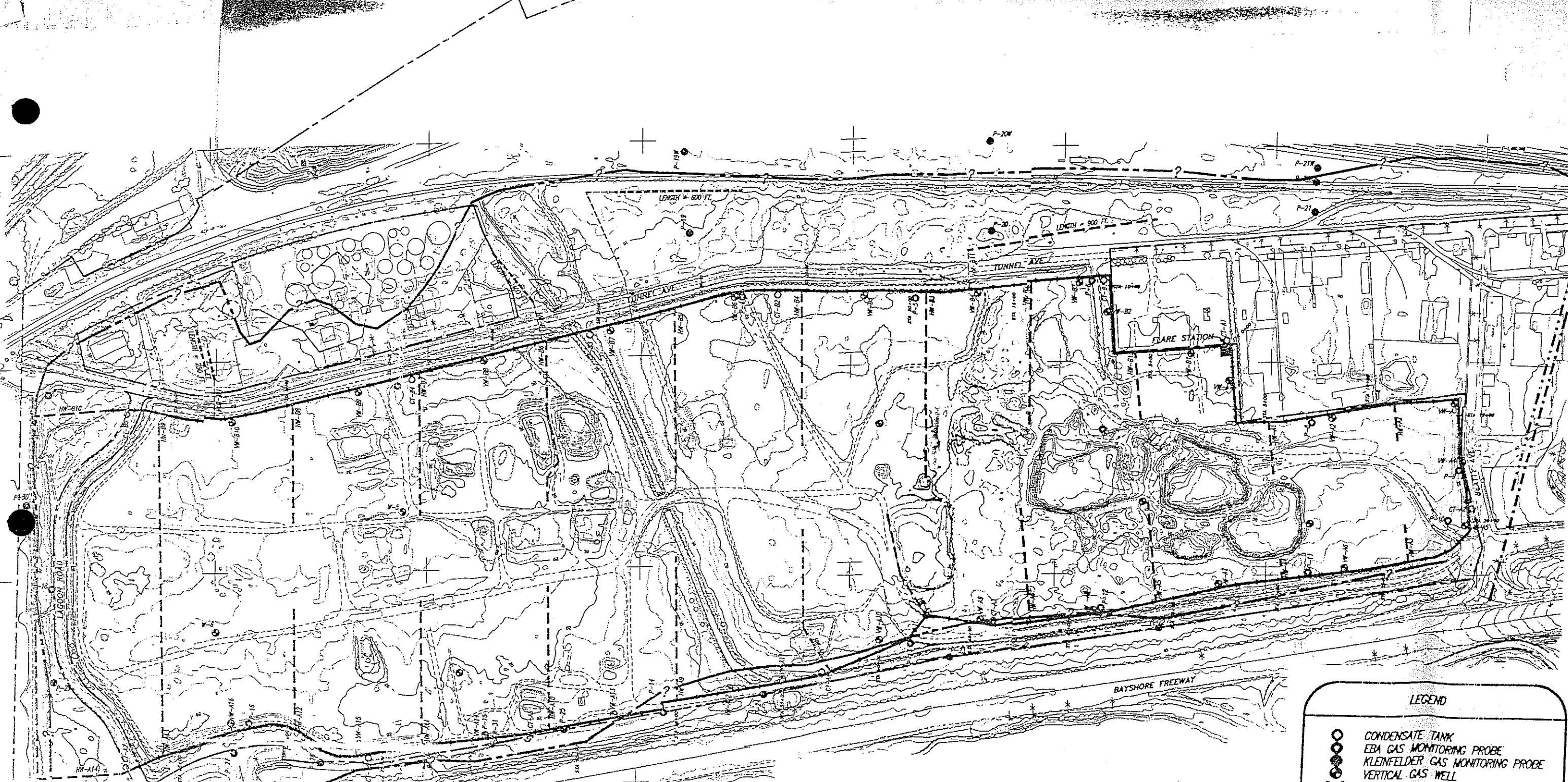
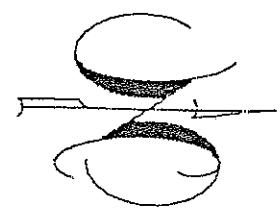
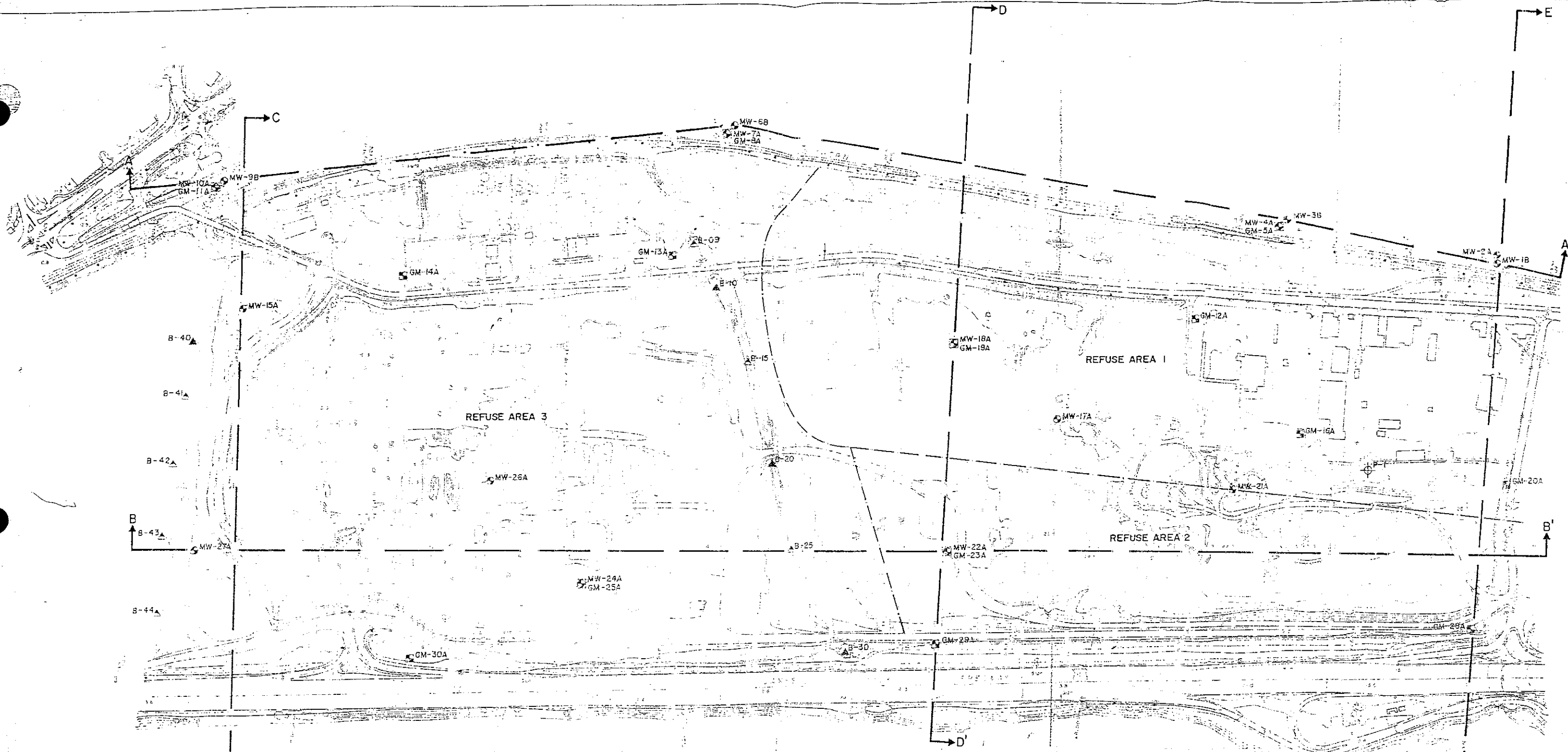


FIG. 2 SITE PLAN - METHANE RECOVERY SYSTEM
 BRISBANE LANDFILL, BRISBANE CA
 Prepared by: Kleinfelder - April 26, 1991



LEGEND	
○	CONDENSATE TANK
○	EPA GAS MONITORING PROBE
○	KLEINFELDER GAS MONITORING PROBE
○	VERTICAL GAS WELL
⊗	UNDERGROUND PIPE LIMITS
∇	PIPE REDUCER
⊥	WELL LATERAL
⊥	HORIZONTAL GAS WELL
⊥	GAS COLLECTION HEADER
⊗	FENCE
BOP	BOTTOM OF PIPE ELEVATION
STA	STATION
PI	POINT OF INTERSECTION
HW	HORIZONTAL WELL
VW	VERTICAL WELL
CT	CONDENSATE TANK
---	PROPERTY LINE
-?-	APPROX. LIMITS OF REFUSE
- - -	ESTIMATED LIMITS (REFUSE)
- - -	ESTIMATED LIMITS (NO REFUSE)



LEGEND

- MW-1A to MW-36: GAS AND GROUND WATER MONITORING WELL
- GM-1A to GM-30A: SURFACE WATER MONITORING LOCATION
- B-10 to B-44: SURFACE WATER MONITORING AND GAGING LOCATION

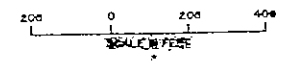
LEGEND

- ⊕: APPROXIMATE LOCATION OF PIEZOMETER P-1 (REF. G)
- : APPROXIMATE LIMITS OF REFUSE FILL AREAS
- A-A', B-B', C-C', D-D', E-E': GEOLOGIC CROSS SECTION LOCATION

WRIGHT AERIAL SURVEYS INC
 EXECUTIVE AIRPORT
 SACRAMENTO CALIFORNIA 95821
 TEL. (916) 421-3445

CLIENT: KCA ENGINEERS, INC.
 LOCATION: BRISBANE
 JOB NO.: 5726A PHOTO NO.: 84287
 SCALE: 1"=200' PHOTO DATE: OCT. 4, 1984

David Cortright
 PHOTOGRAPHY AND SURVEYING



J.H. KLEINFELDER & ASSOCIATES
 GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS
 MATERIALS TESTING - LAND AND WATER RESOURCES

PROJECT NUMBER 10-1504-01

BRISBANE LANDFILL
 BRISBANE, CALIFORNIA

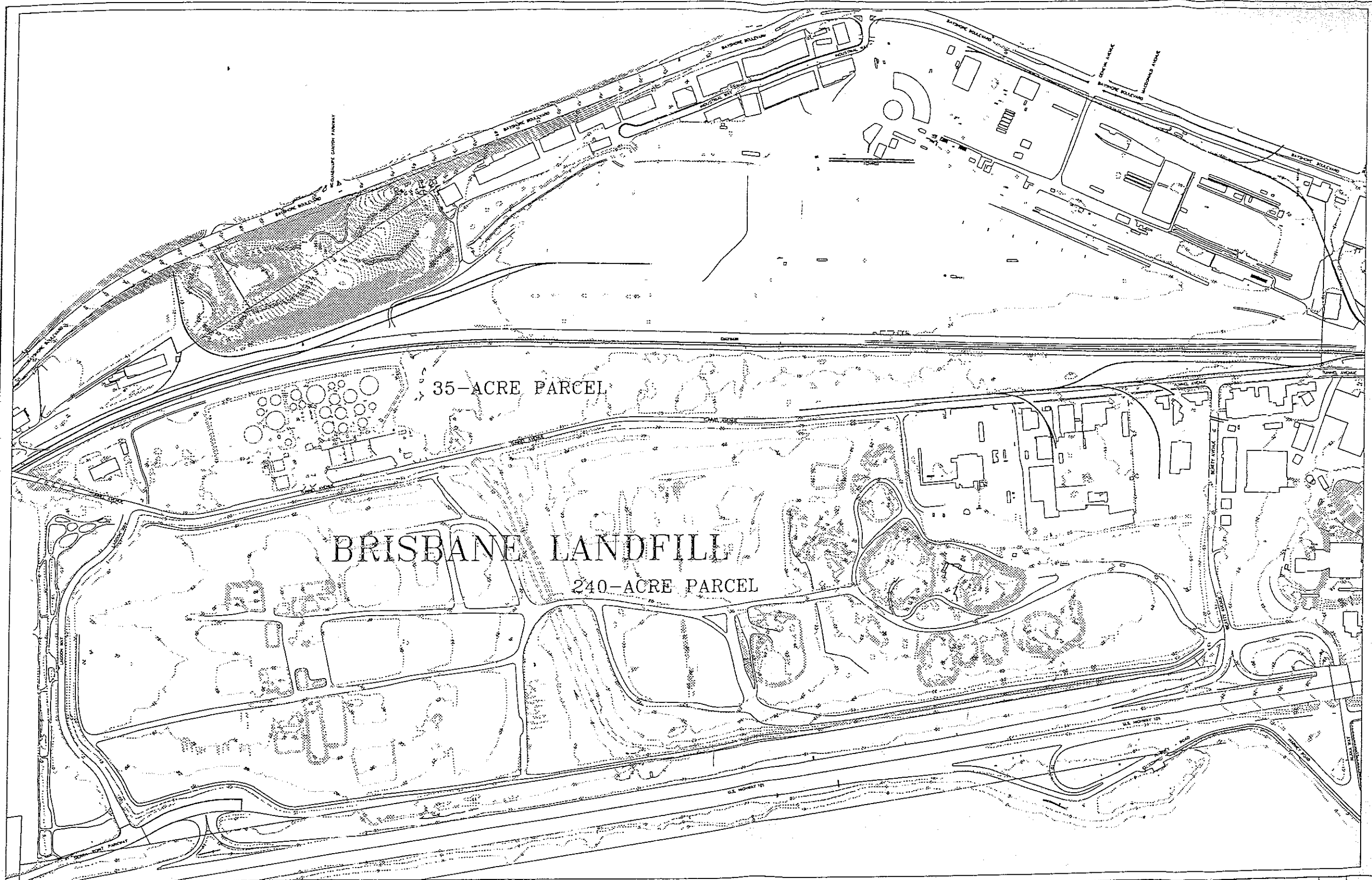
SITE EXPLORATION MAP

PLATE
2

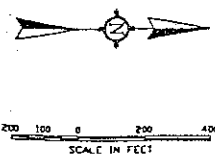
KCA ENGINEERS, INC.

LEGEND

- ⊕: PHOTO CENTER
- : FENCE
- : GUARD E.I.K.
- : WATER
- : DIRT ROAD
- : PAVED ROAD
- : CLEAR AND CUTTER



NOTES:
 1. Site topographic map provided by David Evans and Associates, based on aerial photographic survey conducted by Hammon, Jensen & Wallen [25 & 26 September 1997].

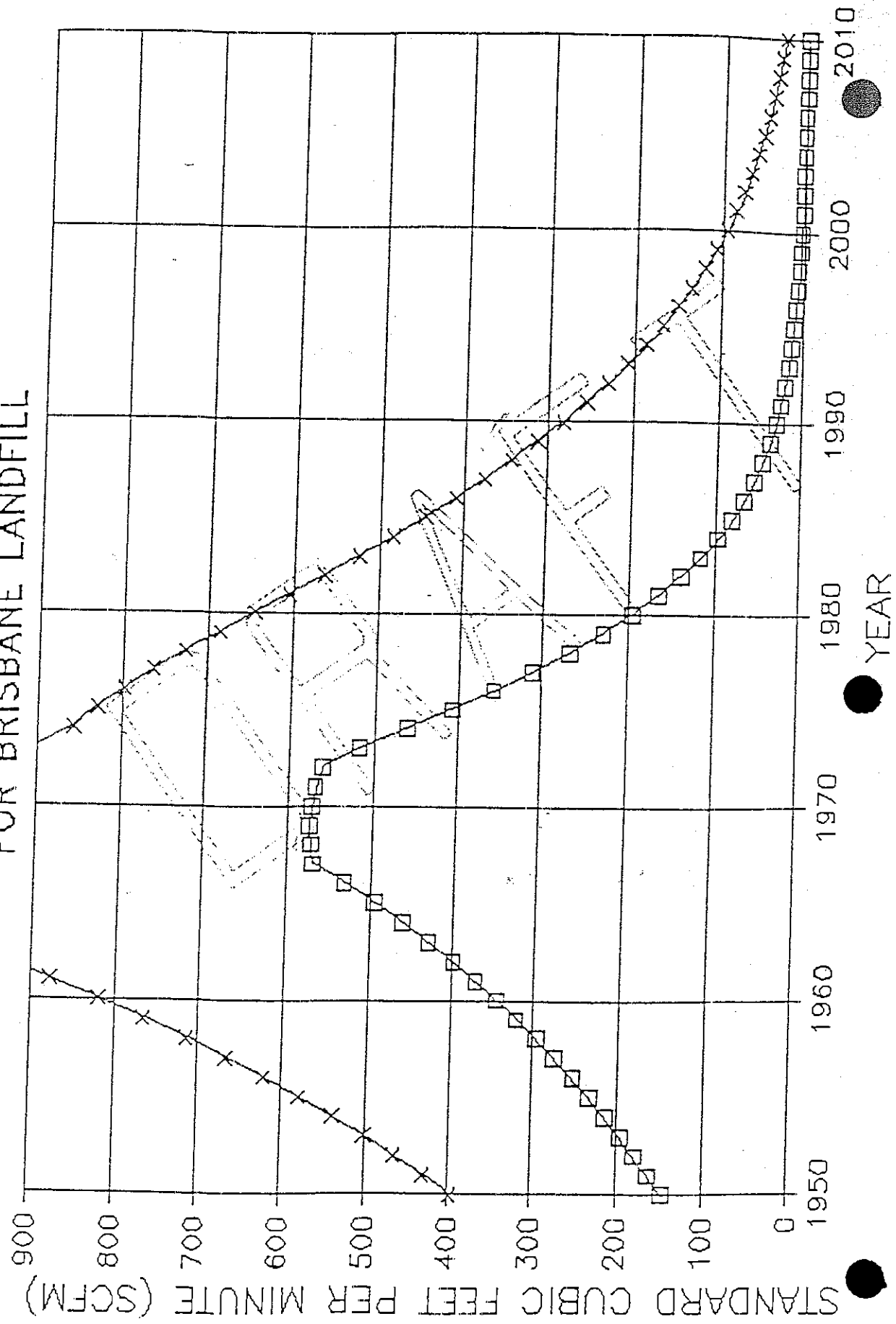


		DATE: 6 APRIL 2000		PROJECT NO: W00225		SCALE: 1"=200'	
DRN BY: WLG		APR 2000		PROJECT: IDENTIFICATION OF PROPERTY OWNERS AND DELINEATION OF LANDFILL FOOT PRINT BRISBANE LANDFILL, BRISBANE CALIFORNIA		DR BY:	
CHK BY: KJD		APR 2000		SHEET TITLE:		APP BY:	
REV BY:		DATE:		DESCRIPTION:		FILE NO: WAP350MC	
APP BY:		DATE:		DESCRIPTION:		DOCUMENT NO: W0000188	
SUNQUEST PROPERTIES, INC						FIGURE NO. 3 OF 5	

S:\PROJECTS\W00225\MAP3.DWG

FIGURE 6

METHANE GAS GENERATION CURVE FOR BRISBANE LANDFILL



CT-A2
1000 GAL OBL WALL FRP TANK

V-2
VERTICAL INLET SEPARATOR
30" DIA X 6' 5/5

B-1
GAS BLOWER

V-1 A/B
5 GAL PROPANE BOTTLE
& 10 SPARE

FE-1
FLOW ELEMENT

FA-1
FLAME ARRESTER

FLARE
LANDFILL GAS FLARE
10 MM BTU/HR

C-1 - 14
ACTIVATED CARBON
CANISTER

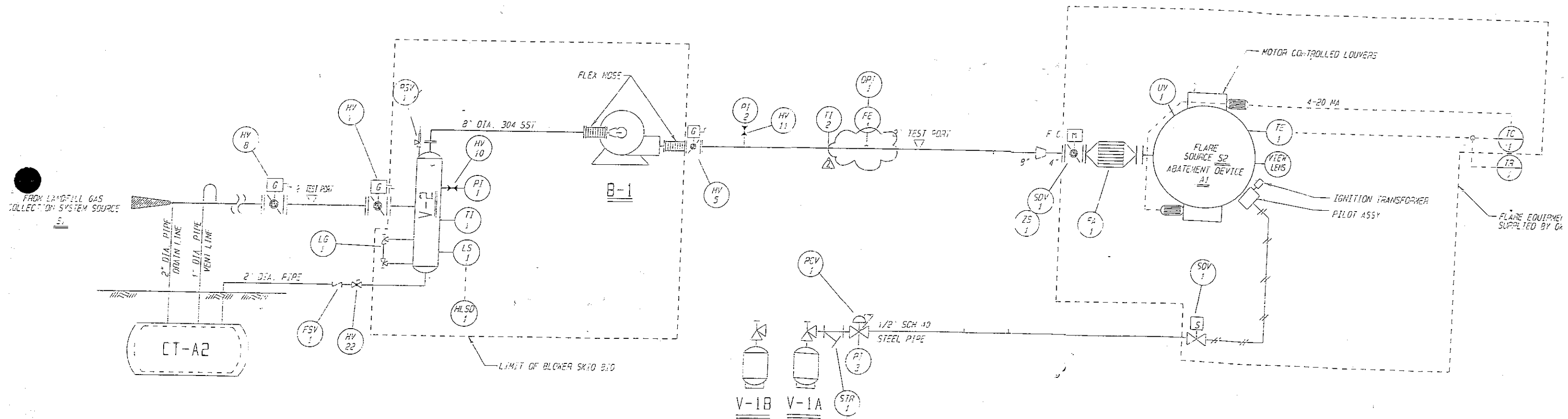


Fig. 7 P&ID of The FLARE STATION