GL04351_4

EXLOG SMITH R.F. SMITH CORP.

GEOTHERMAL DIVISION

GEOTHERMAL DATA LOG

COMPANY GEO Operator Corp.
WELL Prati State #24
FIELD The Geysers
COUNTY Sonoma STATE California
LOCATION Sec. 1, T. 11N, R. 9W
ELEVATION 2596' KB ☐ DF ☐ GL ☒
CONTRACTOR/RIG Loffland 306
SPUD DATE 1/28/87 TD DATE 2/22/87
TD 4119' TRUE VERT DEPTH 3989'
BOTTOM HOLE LOCATION
WELL STATUS Abandoned hole and kick-off
COMPANY REPRESENTATIVE R. Donnely,S. Hopkins

LOG INTERVAL

DATE LOGGED 1/28/87 to 2/22/87
DEPTH LOGGED 143' to 4119'
MUD DRILLING 143' to 4119'
AIR DRILLING
TEMPERATURE INSTRUMENT TYPE J-type thermocouple
PRESSURE INSTRUMENT TYPE
GAS TRAP-AGITATOR ELEC ☐ AIR ☒
LOG SCALE 1:600 UNIT NO. 317
LOG PREPARED BY D.VanHorsen, W. Halligan

HOLE SIZE		CASING RECORD	
26"	to 965'	20"	at 959'
17½"	to 2061'		at
	to		at
	to		at
	to		at
	to		at

ENTRIES-WATER/STEAM

✱ = TESTED ZONES

LOST CIRCULATION ZONES

4119'lost complete circulation

MISC. REMARKS

LITHOLOGY SYMBOLS

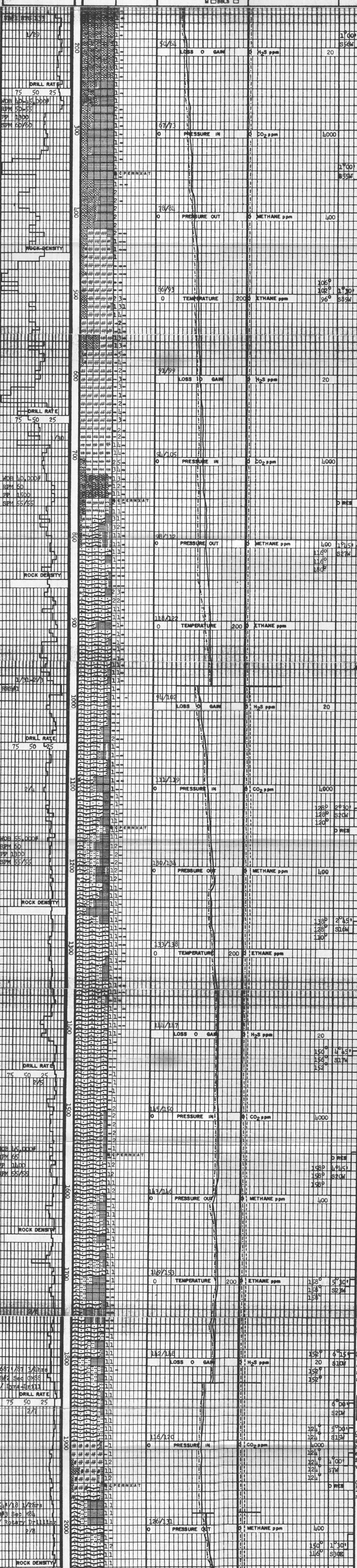
- Breccia
- Tuff and tuff-breccia
- Conglom.
- Graywacke
- Sandstone
- Siltstone
- Claystone Argillite
- Limestone Dolomite
- Chert
- Solution Deposit
- Mineralized Zone
- Granitic Rock
- Intermed Igneous
- Basic Igneous
- Peridotite
- Acidic Volcanic
- Intermed. Volcanic
- Basic Volcanic
- Porphyry
- Serpentine
- Schist Gneiss
- Cmt Cement

SECONDARY MINERALS

Q = QUARTZ
C = CALCITE
P = PYRITE
E = EPIDOTE
R = PYRRHOTITE
N = PREHNITE
X = AXINITE
A = ACTINOLITE
T = TOURMALINE

NB	NEW BIT	W	MUD DENSITY
RRB	RE-RUN BIT	V	FUNNEL VISCOSITY
CB	CORE BIT	PV	PLASTIC VISCOSITY
WOB	WEIGHT ON BIT	YP	YIELD POINT
RPM	REVS PER MINUTE	F	FILTRATE API
SPM	STROKES PER MINUTE	FC	FILTER CAKE
CFM	CUBIC FT PER MINUTE	SOL	SOLIDS-%
NR	NO RETURNS	SD	SAND CONTENT-%
C	CARBIDE TEST	S	SALINITY- PPM Cl
LAT	LOGGED AFTER TRIP	CA	CALCIUM-PPM Ca
BHT	BOTTOM HOLE TEMPERATURE	RM	MUD RESISTIVITY
TC	TIME SINCE CIRCULATION		WIRELINE LOG RUN
	CASING SHOE		WATER/STEAM ENTRY
	CORED INTERVAL		ORIFICE/FLOW TEST
	NO RECOVERY		

DRILL RATE ft./hr ☒ min/ft ☐ m/hr ☐ min/m ☐ | DEPTH | LITHOLOGY | SECONDARY MINERALIZATION | TEMPERATURE °C ☐ °F ☒ IN — OUT; PRESSURE KSC ☐ PSI ☐ IN — OUT; LOSS/GAIN M³ ☐ BBLS ☐ | H₂S ppm; CO₂ ppm; METHANE ppm; ETHANE ppm | SURVEYS RESISTIVITY Ω-M | LITHOLOGY DESCRIPTION AND REMARKS



Note:Spudded GEO Prati #24 on January 28, 1987 @ 143'. Commenced logging @ 150' on 17½" hole.

Chert:brick red-brn,ho vit-porcellaneous lstr abun trnsl-opq qtz mic rovng,r radio,grads to Argillite:brn,brn-red, sft,friable,pred earth dull,r phyll shn,no vi qtz microvng only lg qtz vn present,occ blk organic? coating vis near vn fracs.

W 65 V 40 PV 4 YP 14 pH 12.5 F 72 FC 4 S .5 SD 250 SOL 2.5

Greenstone:pred med-dk grn,tr lt grn,tr red-grn,hd,aphan-phan w/ pred gr size from fn-crs,loc gd vis rel tex loc abun frac app in aphan var,mass,tr flow bndng,aphan var incr w depth,less vis rel tex mott app w/ r vis gr,t qtz filled amygs,tr-co hem stng.

Greenstone:med-dk grn mod hd-hd,aphanitic t fn gr,mass w/loc rel text,v mottled app,oc tr sulfides.

W 67 V 90 PV 7 YP 71 pH 11.4 F 82 FC 4 S .25 SD 250 SOL 4.5

Chert:pred brick-red, lt tan/yel,lt grn,grn/ gry also present,hd-vh mass,pred microvng of blu/wht qtz,loc larger qtz vng,pred dull lstr

Clay:lt-med gry,sft, sticky.

Argillite:pred med gry to blk,occ brn/blk,moc sft,silty,friable,mnr qtz/calc vng present.

Graywacke:pred lt-med gry,occ grn/gry inc w/ depth,hd,med-fn gr,sub ang to ang gr w/fr to gd bndries,mod sorted, mass,ident framework of qtz,felds,bio,epi, chert and argillite,r-tr pyrite.

Note:Drld 17½" hole to 980'.Open hole to 26" to 965'.Set 20" csg @ 959'.Resume drlg 17½" hole on mud.

Graywacke:lt-med gry, hd,gd gr bndrs,v fn-fn gr,subrdd-ang gr,mod-well srtd,grads to Siltstone,loc vis inte bds w/ Argillite

Clay:lt gry,sft,mod sticky,mod non solubl

Argillite:pred blk to brn/blk,sft,com waxy lstr,phyll sheen,loc lam,friable,diss pyr.

Siltstone:dk gry to blk,mod hd,fn-vfn gr, fri where vnd w/calc & qtz,occ lam of grs,int -ercal w/Graywacke, cont as sltst w/fn-med grs,diss and eu pyr.

W 66 V 50 PV 7 YP 21 pH 10.5 F 36 FC 3 S 250 SD tr SOL 3.5

Graywacke:lt-dk gry,gry brn,gry grn,hd,vf-f-med-crs gr,pr-mod well srtd,fr-gd gr bndrs,no vis fol,mass,.5-3mm di qtz & calc vng,pred si & arg mtx,tr epid,qtz detrl gr vis.

Graywacke:gry grn,hd, f-med gr,mod well srtd tr loc wk fol of elong blk mafic gr,gd gr bndrs,incr chlor mtx w mnr arg mtx,pred mass, decr in vng.

W 68 V 55 PV 10 YP 18 pH 10.4 F 45 FC 3 S 250 SD tr SOL 5.5

Argillite:pred brn/bl sft,com phyll text,lo slty,loc dull lstr.

Graywacke:gry/grn w/m gr ctgs med gry,hd,ma mod well srtd gr w/ g bndrs,wk bdd of mafic mins,loc chlor mtx al rnt w/sil mtx,loc com vng.

Siltstone:med gry,gry brn,mod hd,v fn gr w/ tr fn gr,pred mass,tr qtz & calc vng,mnr re sed bddng.

Argillite:dk gry,gry brn,sft-mod hd,earthy- tr phyll shn.

Graywacke:lt-dk gry, gry grn,hd,vf-fn-med gr,pr-fr gr bndrs, intercal w/ Siltstone, med gr smpl has gd gr bndrs,arg mtx w/ vf-f gr smpl.

Clay:lt gry,sft,v non soluble.

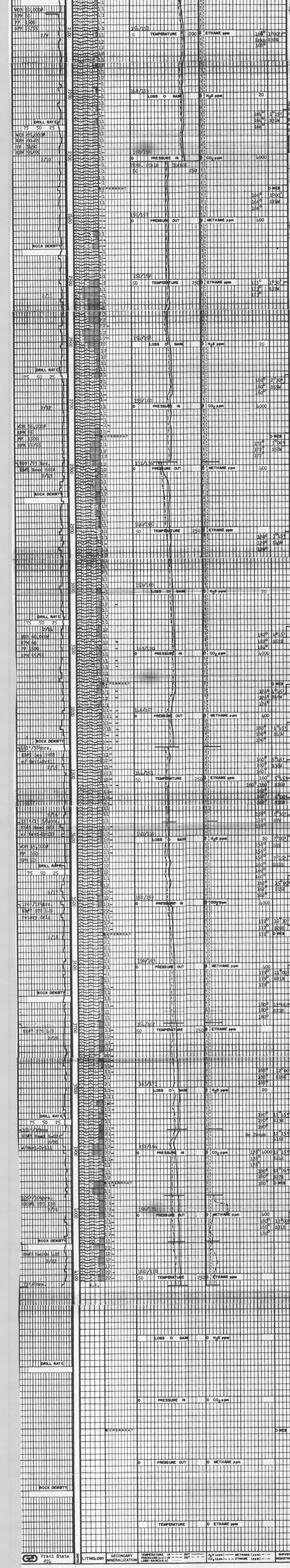
Argillite:pred blk or brn/blk,sft,mod slty, com dull lstr,occ phyl sheen,occ sed bdd ob- served,loc r pyr.

W 66 V 50 PV 8 YP 18 pH 11 F 35 FC 3 S 250 SD tr SOL 3.5

Greenstone:pred med-dk grn,tr mott grn-red, hd,pred crs gr w/ fill- ed amygs,mott app,tr flow bndng,incr calc vng.

Chert:brick red-brn,tr lt gry,hd,abun qtz microvng.

Graywacke:pred lt-med gry,mnr gry-grn,lt-med brn,hd,vf-f-med gr, prly-mod well srtd,fr- gd vis gr bndrs,com sil mtx w/ mnr arg & chlor zones,tr silty clast incl,tr sed bdd



in vf gr smpl,grads to Siltstone:med brn,sft, tr sed bdd.

Argillite:pred blk, brn/blk,sft,occ phyl sheen,silty,occ sed bdd.

Graywacke:med to dk gry,grn/gry,hd,loc fr pred med gr w/gd bndrs mod srtd,sbang-sbrnd, grs,mnr calc/qtz vng,

Graywacke:pred lt-med gry grn,tr lt-med brn, hd,mass,fn-med gr,fr-gd gr bndrs,tr detrl epid,tr silty & arg cr gr incl.

W 67 V 58 PV 10 YP 15
pH 10.8 F 30 FC 3
S 250 SD tr SOL 4.5

Graywacke:pred med-dk gry,loc lt brn,hd,mass fn-med gr w/gd visible bndrs,loc "dirty" app, tr calc/qtz vng.

Siltstone:med-dk gry, hd,occ lams,vfn gr/w gd bndrs,mnr calc/qtz vng.

Argillite:gry-blk,med-dk brn,sft-sl hd,friable,tr rel bddng,sl phyll sheen,pred mass.

Graywacke:pred med-dk gry,hd,mass,pred fn gr w/gd bndrs,loc calc/ qtz vng.

Siltstone:dk gry,hd, mass,wellsrtd,gd gr bndrs when visible,fn gr,loc r pyr.

Graywacke:pred lt grn-lt grn-gry,hd,pred mass w/ loc r rel sed bddng,loc decr in dk mafic mnrls in tr amts fr-gd gr bndrsw/ fn-med-crs gr size,tr detrl epid.

W 67 V 70 PV 8 YP 21
pH 10.4 F 36 FC 3
S 250 SD tr SOL 4.5

Argillite:pred brn/blk, sft,vfn gr,slty,phyl sheen,occ lams.

Graywacke:med-dk gry, loc med brn,loc gry/ grn,hd,fr-gd bndrs,med -fn gr,occ crs gr,sil mtrx,occ det epi,r pyr, occ lg amts of bio.

Siltstone:dk gry,hd,vfn gr w/fr-gd bndrs,occ sed bdd,mnr calc/qtz vng,r pyr,mnr bio.

Graywacke:lt-dk gry, gry-brn,hd,loc friable loc zones of v-prly srtd smpl w/ gr size f/ vf-v crs,pred fn-med gr size,occ sed bddng vis,tr detrl epid,loc tr pyrr in calc/qtz vng.

Argillite:pred blk, brn/blk,sft,occ phyl sheen,silty,occ sed bdd,loc tr pyrr in calc/qtz vng.

W 67 V 62 PV 10 YP15
pH 10.5 F 34 FC 3
S 250 SD tr SOL 4.5

Graywacke:pred lt-med gry,loc gry/grn,hd,fr-gd bndrs,fn-med-crs gr size,loc v crs,loc r euh qtz xl.

Argillite:dk gry,gry-blk,sft,mod phyll shn, loc sed bddng.

Graywacke:pred lt-dk gry,loc gry/grn,hd,gd bndrs,med-fn gr,occ crs gr,sil mtrx,occ det epid,tr pyr,tr pyrr.

Graywacke:lt-dk gry, occ brn,hd,fn-med gr, occ crs,gd gr bndrs, occ sed bdd,mod-pr srtd,ang-sbrnd gr,occ sucrosic,tr pyr & pyrr

Argillite:pred blk, sft,occ slty,mod phyl sheen,occ lams.

W 67 V 55 PV 16 YP 19
pH 10.5 F 2 FC 2 S
250 SD tr SOL 4.5

Siltstone:med-dk gry, hd,mass,fn gr w/ gd to fr bndrs,mod srtd,ang-sbrnd.

Graywacke:lt-dk gry, occ lt-dk brn,hd,loc brit,pred fn-med gr w/ mnr-com crs gr,ang-sbrnd gr,v prly-mod srtd,suc app in vf-fn gr smpl,pr-gd gr bndrs r detrl epid.

Argillite:gry-blk,blk, sft-frm,loc frstd,fr-gd phyll shn,occ crs gr incl,mnr rel sed bddng.

Siltstone:gry/blk-dk gry(N2-N3),occ brn/blk (5YR2/1),mod hd-hd,lam & xbdd,mod-pr srtd,ang to sbrnd gr w/fr-gd bndrs,sub-eu qtz vng.

Graywacke:med dk gry-dk gry(N3-N4),hd,pred med gr w/ loc zones of vf-f-med-crs-v crs gr in a v prly srtd-mod srtd smpl,gd gr bndrs, com arg-silty crs-v crs gr,mnr-com detrl epid,tr loc repl/rel sed bddng w/ dism pyr.

W 67 V 48 PV 16 YP 18
pH 10.5 F 22 FC 2 S
250 SD tr SOL 4.5

Argillite:grayish blk-blk(N1-N2),sft,brit,tr-mod phyll shn,loc frstd loc crs-20mm euh qtz.

Graywacke:med dk gry-dk gry,hd,vf-fn-med gr smpl,ang-sbrndd, prly-mod srtd,pred gd gr bndrs w/ loc fr gr bndrs near qtz/calc vng,com grads to **Siltstone:**dk gry-gryish blk(N3-N2),hd,tr rel sed bddng.

Argillite:gry/blk - dk gry,sft-mod hd,occ slty,occ strng qtz/& calc vng,occ lams.

Note:Lost complete circ. @ 4119'.Unable to POOH due to stuck pipe.Retr majority of d.p. but unable to retrieve rest of fish.Abandon & cmt hole to 2061'.Kick-off & drill Prati State #24 S.T. #1.

Prati State
#24

REMARKS - LITHOLOGY
EXLOG / SMITH