

NORTE

SIMBOLOGIA	
	TUBERIA DE PROYECTO ACERO DE 12" Ø
	RUTA ALTERNATIVA
	LIMITE MUNICIPAL
	CARRETERA FEDERAL TOTAL: 109.868 ml.
	MANCHA URBANA TOTAL: 45.028 ml.
	PROPIEDAD PRIVADA TOTAL: 16.436 ml.
	CITY GATE

SIMBOLOGIA	
	TUBERIA DE PROYECTO ACERO DE 12" Ø
	VALVULA 01 5+404.00
	VALVULA 02 8+800.00
	VALVULA 03 11+700.00
	VALVULA 04 17+451.00
	VALVULA 05 20+170.00
	VALVULA 06 23+622.00
	VALVULA 07 28+025.00
	VALVULA 08 32+845.00
	VALVULA 09 40+886.00
	VALVULA 10 48+643.00
	VALVULA 11 56+893.00
	VALVULA 12 64+000.00
	VALVULA 13 73+172.00
	VALVULA 14 81+560.00
	VALVULA 15 89+158.00
	VALVULA 16 96+890.00
	VALVULA 17 105+821.00
	VALVULA 18 114+496.00
	VALVULA 19 121+907.00
	VALVULA 20 130+006.00
	VALVULA 21 133+625.00
	VALVULA 22 137+687.00
	VALVULA 23 141+175.00
	VALVULA 24 145+199.00
	VALVULA 25 149+482.00
	VALVULA 26 157+360.00
	VALVULA 27 164+900.00
	VALVULA 28 172+469.00



PLANTA GENERAL ZACATECAS - AGUASCALIENTES
 TRAYECTO DE PROYECTO GENERAL.

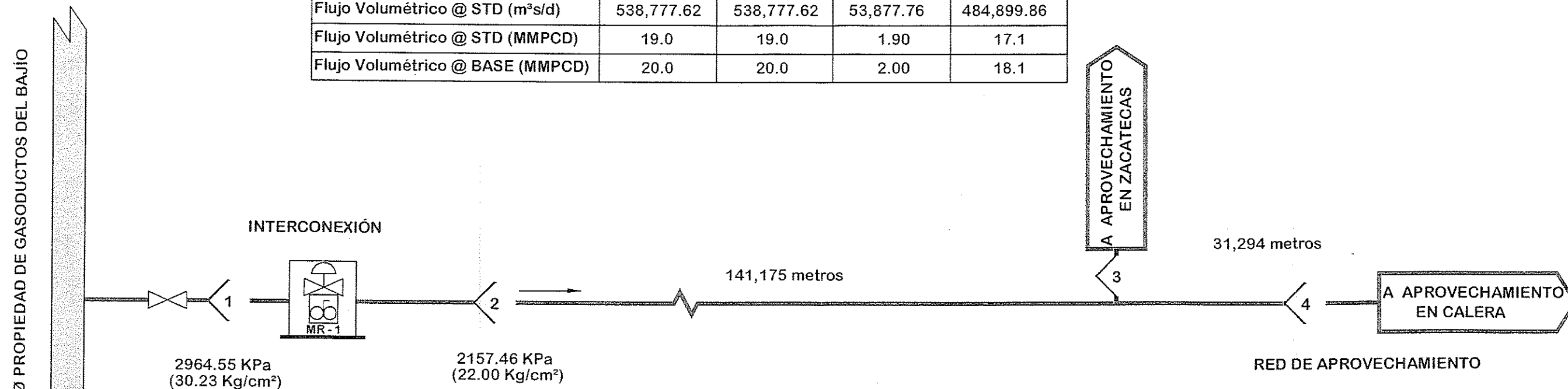
PLANO No:
GNI-Ags-Zac-Tr-Gral-12_02

REFERENCIA:
 PLANO DE TRAYECTORIA DEL SISTEMA DE TRANSPORTE DE ACCESO ABIERTO.

OFICINA:	ING. JORGE A. CAMACHO S.
CLIENTE:	ING. OMAR REYES RDZ.
PROYECTISTA:	ARQ. BRAZIL G. AGUILAR R.
FECHA:	TORREON, COAH. MARZO / 2013
ESCALA:	SIN
UNIDAD:	METROS.

TRANSPORTADORA DE GAS NATURAL DE ZACATECAS S.A. DE C.V.
 Departamento de Proyectos

No. DE CORRIENTE	< 1	< 2	< 3	< 4
GAS NATURAL				
Presión de operacion kPa y (kg/cm ²)	2964.55 kPa (30.23)	2157.46 kPa (22.00)	1,758.33 KPa (17.93)	1,717.14 KPa (17.51)
Temperatura (°C)	18	18	18	18
Flujo Volumétrico @ P,T (m ³ /d)	18,110.56	24,642.31	3,005.44	27,640.52
Flujo Volumétrico @ STD (m ³ s/d)	538,777.62	538,777.62	53,877.76	484,899.86
Flujo Volumétrico @ STD (MMPCD)	19.0	19.0	1.90	17.1
Flujo Volumétrico @ BASE (MMPCD)	20.0	20.0	2.00	18.1

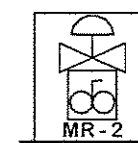


ESPECIFICACIONES

GASODUCTO
UBICACIÓN
 LOCALIZACION DE CLASE: 4
 PRESION DE DISEÑO: 3,799.09 kPa (551.01 Psi)
 PRESION DE PRUEBA: 5,698.64 kPa (826.51 Psi)
 DIAMETRO EXTERIOR DEL GASODUCTO: 323.85 MM (12.75")
 ESPESOR DE PARED: 5.56 MM (0.219")
 MATERIAL: API 5L X60
 LONGITUD APROXIMADA: 172,469 metros
 MPOP DEL SISTEMA: 3,123.32 kPa (452.06 Psi)

CASSETAS:
 LOCALIZACION DE CLASE: 4
INTERCONEXION:
 CLASE ANSI: 300#

SIMBOLOGIA

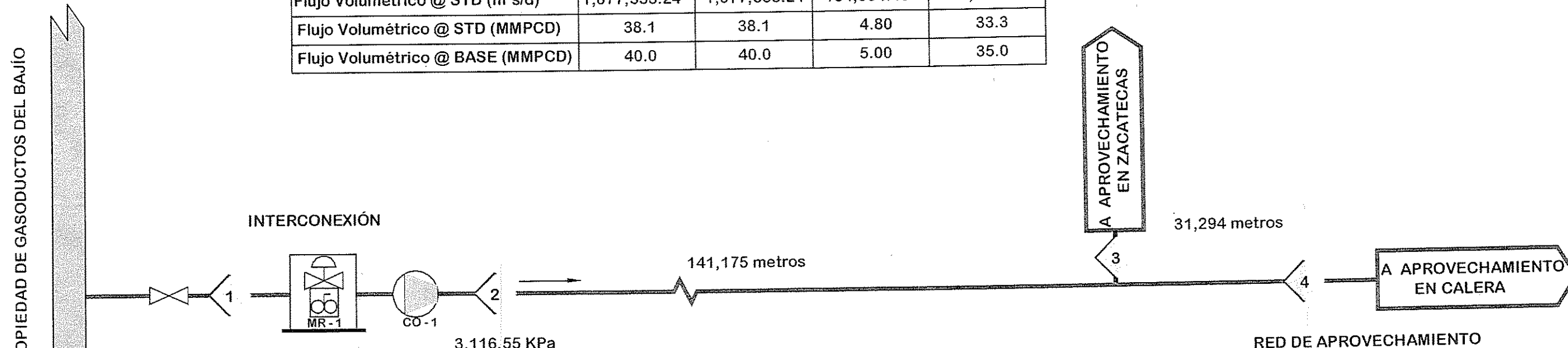


ESTACION DE REGULACION
Y MEDICION

**DIAGRAMA DE FLUJO DE GAS NATURAL
 SISTEMA DE TRANSPORTE DE:
 TRANSPORTADORA DE G.N. DE
 ZACATECAS ETAPA 1**

Estas especificaciones son adicionales al Diagrama de Flujo, las cuales facilitan el entendimiento integral del proyecto

No. DE CORRIENTE	< 1	< 2	< 3	< 4
GAS NATURAL				
Presión de operacion kPa y (kg/cm ²)	2,964.55 kPa (30.23)	3,116.55 kPa (31.78)	2,059.49 KPa (21.00)	1,864.24 KPa (19.01)
Temperatura (°C)	18	18	18	18
Flujo Volumétrico @ P,T (m ³ /d)	36,221.13	34,498.34	6,456.56	49,686.54
Flujo Volumétrico @ STD (m ³ /d)	1,077,555.24	1,077,555.24	134,694.40	942,860.83
Flujo Volumétrico @ STD (MMPCD)	38.1	38.1	4.80	33.3
Flujo Volumétrico @ BASE (MMPCD)	40.0	40.0	5.00	35.0



ESPECIFICACIONES

GASODUCTO
UBICACION
 LOCALIZACION DE CLASE: 4
 PRESION DE DISEÑO: 3,799.09 kPa (551.01 Psi)
 PRESION DE PRUEBA: 5,698.64 kPa (826.51 Psi)
 DIAMETRO EXTERIOR DEL GASODUCTO: 323.85 MM (12.75")
 ESPESOR DE PARED: 5.56 MM (0.219")
 MATERIAL: API 5L X60
 LONGITUD APROXIMADA: 172,469 metros
 MPOP DEL SISTEMA: 3,123.32 kPa (452.06 Psi)

CASSETAS:
 LOCALIZACION DE CLASE: 4
INTERCONEXION:
 CLASE ANSI: 300#

Estas especificaciones son adicionales al Diagrama de Flujo, las cuales facilitan el entendimiento integral del proyecto

SIMBOLOGIA

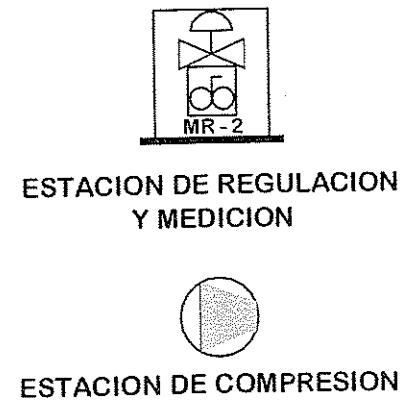
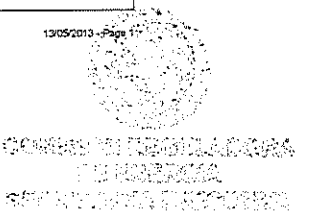


DIAGRAMA DE FLUJO DE GAS NATURAL SISTEMA DE TRANSPORTE DE: TRANSPORTADORA DE G.N. DE ZACATECAS ETAPA 2

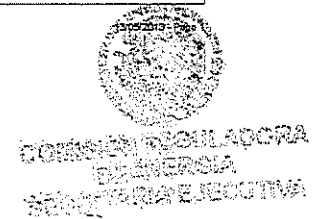
Node #	Node Name	Pressure	Pressure Units	Pressure Known	Base Load	External Load	External Load (#Used)	Total Load	Load Units	Load Known	Adjust Base Q By DF	Base Load Status	Adjust Q By DF	External Load Status	Elevation, m	Atm Pressure, Pa	Temperature, C	Temperature Known	Specific Gravity	Viscosity, Centipoise	Heating Value, Btu/lb	Specific Heat	Properties Known	X Coordinate, m	Y Coordinate, m	Relate Type	Relate Status	Related Model	Related Node
1	VALV. SECCIONAMIENTO 26	248.07	Pa	No	-18.000	0.000	0.000	-18.000	MASCts	Yes	Yes	On	Yes	On	2159	11.30	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7343.6	254104	None			
2	VALV. SECCIONAMIENTO 27	248.01	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2163	11.29	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7363.9	254234	None			
3	VALV. SECCIONAMIENTO 27	261.89	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2163	11.29	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7363.9	252758	None			
4	VALV. SECCIONAMIENTO 26	261.74	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2241	11.18	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7411.7	252388	None			
5	VALV. SECCIONAMIENTO 25	251.93	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2229	11.30	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7433.8	252388	None			
6	VALV. SECCIONAMIENTO 24	264.03	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2411	10.95	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7488.4	251917	None			
7	VALV. SECCIONAMIENTO 23	262.12	Pa	No	-2.000	0.000	0.000	-2.000	MASCts	Yes	Yes	On	Yes	On	2424	10.93	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7480.1	251917	None			
8	VALV. SECCIONAMIENTO 22	256.01	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2329	11.06	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7503.9	251895	None			
9	VALV. SECCIONAMIENTO 21	260.44	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2274	11.14	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7462.6	251895	None			
10	VALV. SECCIONAMIENTO 20	260.56	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2213	11.23	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7466.2	251845	None			
11	VALV. SECCIONAMIENTO 19	260.93	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2236	11.19	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7471.0	251806	None			
12	VALV. SECCIONAMIENTO 18	260.89	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2140	11.33	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7471.0	251806	None			
13	VALV. SECCIONAMIENTO 17	272.54	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2266	11.25	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7486.2	252039	None			
14	VALV. SECCIONAMIENTO 16	277.43	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2079	11.42	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7483.4	252071	None			
15	VALV. SECCIONAMIENTO 15	280.97	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	2001	11.48	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.2	249345	None			
16	VALV. SECCIONAMIENTO 14	284.28	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1998	11.53	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	249399	None			
17	VALV. SECCIONAMIENTO 13	287.48	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1981	11.55	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	247995	None			
18	VALV. SECCIONAMIENTO 12	290.78	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1973	11.56	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	247219	None			
19	VALV. SECCIONAMIENTO 11	293.99	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1952	11.59	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	246439	None			
20	VALV. SECCIONAMIENTO 10	296.83	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1923	11.64	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	245715	None			
21	VALV. SECCIONAMIENTO 9	299.70	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1912	11.65	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	244940	None			
22	VALV. SECCIONAMIENTO 8	302.86	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1885	11.69	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	244199	None			
23	VALV. SECCIONAMIENTO 7	306.29	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1858	11.68	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	243438	None			
24	VALV. SECCIONAMIENTO 6	309.93	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1833	11.69	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	242654	None			
25	VALV. SECCIONAMIENTO 5	306.72	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1801	11.67	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	241918	None			
26	VALV. SECCIONAMIENTO 4	308.53	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1769	11.58	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	241200	None			
27	VALV. SECCIONAMIENTO 3	309.13	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1750	11.64	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	240597	None			
28	VALV. SECCIONAMIENTO 2	309.23	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1664	11.56	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	241951	None			
29	VALV. SECCIONAMIENTO 1	311.33	Pa	No	0.000	0.000	0.000	0.000	MP3shv	Yes	Yes	On	Yes	On	1910	11.89	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	241563	None			
30	CITY GATE	312.91	Pa	Yes	20.000	0.000	0.000	20.000	MASCts	No	Yes	On	Yes	On	1918	11.64	18.00	Yes	0.591	0.0000072	34936	1.31	Yes	7493.8	241200	None			



03 0307

Rec #	From Node	To Node	ID Number	Element Type	Status	Equation	Size Type	Inside D	Roughness	DKR Units	Allow Calculation	Cladding Group	Length	Length Units	Efficiency	Total Efficiency	Attached Fittings	Equivalent Length	Flow Rate	Flow Units	Velocity	Reynolds Number	Volume	Inlet Pressure	Outlet Pressure	Pressure Drop	Drop Per 100	Average Pressure	Hoop Stress	SMYS	Pressure Unit	% SMYS	Z Factor	Vertex Count
1	VALV. SECCIONAMIENTO 27	150	1	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	5	m	1.00	1.00	0	0	-21240.582	MPa/hr	3.80	2095652000	6.408	249.01	249.07	0.06	1.19	249.04	7250	35000	Pa	20.72	0.923931	3
2	VALV. SECCIONAMIENTO 28	VALV. SECCIONAMIENTO 28	2	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7563	m	1.00	1.00	0	0	-21240.510	MPa/hr	3.78	2095652000	12637.370	251.74	251.49	1.25	0.02	250.12	7367	35000	Pa	21.02	0.923102	3
3	VALV. SECCIONAMIENTO 29	VALV. SECCIONAMIENTO 29	3	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7563	m	1.00	1.00	0	0	-21240.510	MPa/hr	3.78	2095652000	12637.370	251.74	251.49	1.25	0.02	250.12	7367	35000	Pa	21.02	0.923102	3
4	VALV. SECCIONAMIENTO 30	VALV. SECCIONAMIENTO 30	4	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	4263	m	1.00	1.00	0	0	-21240.510	MPa/hr	3.73	2095652000	7261.368	254.03	253.83	0.10	0.00	253.98	7365	35000	Pa	21.13	0.922854	36
5	VALV. SECCIONAMIENTO 31	VALV. SECCIONAMIENTO 31	5	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	4263	m	1.00	1.00	0	0	-21240.510	MPa/hr	3.73	2095652000	7261.368	254.03	253.83	0.10	0.00	253.98	7365	35000	Pa	21.22	0.922406	37
6	VALV. SECCIONAMIENTO 32	VALV. SECCIONAMIENTO 32	6	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	3538	m	1.00	1.00	0	0	-20891.880	MPa/hr	4.13	2228514000	6122.801	265.01	264.12	0.89	0.08	264.87	7911	35000	Pa	21.46	0.923345	38
7	VALV. SECCIONAMIENTO 33	VALV. SECCIONAMIENTO 33	7	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	4012	m	1.00	1.00	0	0	-20891.880	MPa/hr	4.08	2228514000	7026.123	265.44	265.01	0.43	0.06	265.23	7501	35000	Pa	21.68	0.921188	39
8	VALV. SECCIONAMIENTO 34	VALV. SECCIONAMIENTO 34	8	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	3619	m	1.00	1.00	0	0	-20891.880	MPa/hr	4.04	2228514000	6401.473	262.88	262.44	0.44	0.07	263.15	7852	35000	Pa	21.88	0.922901	12
9	VALV. SECCIONAMIENTO 35	VALV. SECCIONAMIENTO 35	9	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	8339	m	1.00	1.00	0	0	-20891.880	MPa/hr	4.01	2228514000	14471.803	265.51	265.98	0.47	0.09	264.20	7729	35000	Pa	22.08	0.919798	23
10	VALV. SECCIONAMIENTO 36	VALV. SECCIONAMIENTO 36	10	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7411	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.97	2228514000	13426.120	269.88	269.53	0.35	0.06	269.71	7896	35000	Pa	22.48	0.919884	18
11	VALV. SECCIONAMIENTO 37	VALV. SECCIONAMIENTO 37	11	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	8675	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.91	2228514000	15878.250	273.84	273.68	0.16	0.05	273.77	7971	35000	Pa	22.78	0.917863	4
12	VALV. SECCIONAMIENTO 38	VALV. SECCIONAMIENTO 38	12	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	8931	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.85	2228514000	16890.410	277.43	277.84	0.41	0.04	276.64	8078	35000	Pa	23.07	0.918852	7
13	VALV. SECCIONAMIENTO 39	VALV. SECCIONAMIENTO 39	13	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7787	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.83	2228514000	14594.450	280.97	281.43	0.46	0.05	280.30	8178	35000	Pa	23.37	0.916663	21
14	VALV. SECCIONAMIENTO 40	VALV. SECCIONAMIENTO 40	14	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7573	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.78	2228514000	14532.100	284.28	283.87	0.41	0.04	283.62	8275	35000	Pa	23.64	0.914701	17
15	VALV. SECCIONAMIENTO 41	VALV. SECCIONAMIENTO 41	15	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	8398	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.71	2228514000	18291.470	287.46	286.28	1.18	0.04	285.88	8398	35000	Pa	23.91	0.912612	17
16	VALV. SECCIONAMIENTO 42	VALV. SECCIONAMIENTO 42	16	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	9173	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.67	2228514000	18247.950	290.78	289.48	1.30	0.04	289.12	8494	35000	Pa	24.18	0.910525	21
17	VALV. SECCIONAMIENTO 43	VALV. SECCIONAMIENTO 43	17	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7117	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.63	2228514000	14145.000	293.59	293.78	0.19	0.04	293.19	8546	35000	Pa	24.42	0.910091	22
18	VALV. SECCIONAMIENTO 44	VALV. SECCIONAMIENTO 44	18	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	8060	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.60	2228514000	16155.570	296.83	295.59	1.24	0.04	295.21	8641	35000	Pa	24.69	0.911264	29
19	VALV. SECCIONAMIENTO 45	VALV. SECCIONAMIENTO 45	19	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7857	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.58	2228514000	16186.400	299.70	298.83	0.87	0.04	298.27	8724	35000	Pa	24.93	0.910433	3
20	VALV. SECCIONAMIENTO 46	VALV. SECCIONAMIENTO 46	20	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	8541	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.53	2228514000	16510.030	302.88	302.70	0.18	0.04	301.78	8816	35000	Pa	25.19	0.909518	14
21	VALV. SECCIONAMIENTO 47	VALV. SECCIONAMIENTO 47	21	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	4820	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.48	2228514000	9975.784	304.26	303.69	0.57	0.03	303.58	8897	35000	Pa	25.31	0.908999	36
22	VALV. SECCIONAMIENTO 48	VALV. SECCIONAMIENTO 48	22	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	4463	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.48	2228514000	9781.223	305.93	304.28	1.65	0.04	305.10	8895	35000	Pa	25.44	0.908687	21
23	VALV. SECCIONAMIENTO 49	VALV. SECCIONAMIENTO 49	23	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	3452	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.48	2228514000	7712.804	308.74	308.83	0.09	0.02	308.32	8929	35000	Pa	25.51	0.908299	17
24	VALV. SECCIONAMIENTO 50	VALV. SECCIONAMIENTO 50	24	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	2739	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.43	2228514000	5727.874	308.53	308.72	0.19	0.01	308.82	8928	35000	Pa	25.51	0.908193	17
25	VALV. SECCIONAMIENTO 51	VALV. SECCIONAMIENTO 51	25	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	3791	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.40	2228514000	12033.780	309.12	308.53	0.59	0.05	307.82	8996	35000	Pa	25.71	0.907874	21
26	VALV. SECCIONAMIENTO 52	VALV. SECCIONAMIENTO 52	26	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	2800	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.42	2228514000	6117.368	309.22	308.12	1.10	0.00	308.12	9001	35000	Pa	25.73	0.907514	25
27	VALV. SECCIONAMIENTO 53	VALV. SECCIONAMIENTO 53	27	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	3396	m	1.00	1.00	0	0	-20891.880	MPa/hr	4.42	2228514000	7184.986	311.83	309.23	2.60	0.11	310.28	9063	35000	Pa	25.89	0.907114	9
28	VALV. SECCIONAMIENTO 54	VALV. SECCIONAMIENTO 54	28	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	5404	m	1.00	1.00	0	0	-20891.880	MPa/hr	3.40	2228514000	11615.800	312.81	311.33	1.48	0.03	312.12	9100	35000	Pa	26.03	0.906713	17
29	VALV. SECCIONAMIENTO 55	VALV. SECCIONAMIENTO 55	29	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7564	m	1.00	1.00	0	0	-21240.510	MPa/hr	3.80	2095652000	12780.020	261.49	249.01	2.48	0.03	250.25	7321	35000	Pa	20.92	0.923999	15

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Rnc #	From Node	To Node	ID Number	Link ID Number	Customer Count	Facility Type	Attribute Valve 1	Attribute Valve 2
1	VALV_SECCIONA	150	1			0 UnSpecified		
2	VALV_SECCIONA	VALV_SECCIONA	2			0 UnSpecified		
3	VALV_SECCIONA	VALV_SECCIONA	3			0 UnSpecified		
4	VALV_SECCIONA	VALV_SECCIONA	4			0 UnSpecified		
5	VALV_SECCIONA	VALV_SECCIONA	5			0 UnSpecified		
6	VALV_SECCIONA	VALV_SECCIONA	6			0 UnSpecified		
7	VALV_SECCIONA	VALV_SECCIONA	7			0 UnSpecified		
8	VALV_SECCIONA	VALV_SECCIONA	8			0 UnSpecified		
9	VALV_SECCIONA	VALV_SECCIONA	9			0 UnSpecified		
10	VALV_SECCIONA	VALV_SECCIONA	10			0 UnSpecified		
11	VALV_SECCIONA	VALV_SECCIONA	11			0 UnSpecified		
12	VALV_SECCIONA	VALV_SECCIONA	12			0 UnSpecified		
13	VALV_SECCIONA	VALV_SECCIONA	13			0 UnSpecified		
14	VALV_SECCIONA	VALV_SECCIONA	14			0 UnSpecified		
15	VALV_SECCIONA	VALV_SECCIONA	15			0 UnSpecified		
16	VALV_SECCIONA	VALV_SECCIONA	16			0 UnSpecified		
17	VALV_SECCIONA	VALV_SECCIONA	17			0 UnSpecified		
18	VALV_SECCIONA	VALV_SECCIONA	18			0 UnSpecified		
19	VALV_SECCIONA	VALV_SECCIONA	19			0 UnSpecified		
20	VALV_SECCIONA	VALV_SECCIONA	20			0 UnSpecified		
21	VALV_SECCIONA	VALV_SECCIONA	21			0 UnSpecified		
22	VALV_SECCIONA	VALV_SECCIONA	22			0 UnSpecified		
23	VALV_SECCIONA	VALV_SECCIONA	23			0 UnSpecified		
24	VALV_SECCIONA	VALV_SECCIONA	24			0 UnSpecified		
25	VALV_SECCIONA	VALV_SECCIONA	25			0 UnSpecified		
26	VALV_SECCIONA	VALV_SECCIONA	26			0 UnSpecified		
27	VALV_SECCIONA	VALV_SECCIONA	27			0 UnSpecified		
28	VALV_SECCIONA	CITY GATE	28			0 UnSpecified		
29	TED	VALV_SECCIONA	29			0 UnSpecified		



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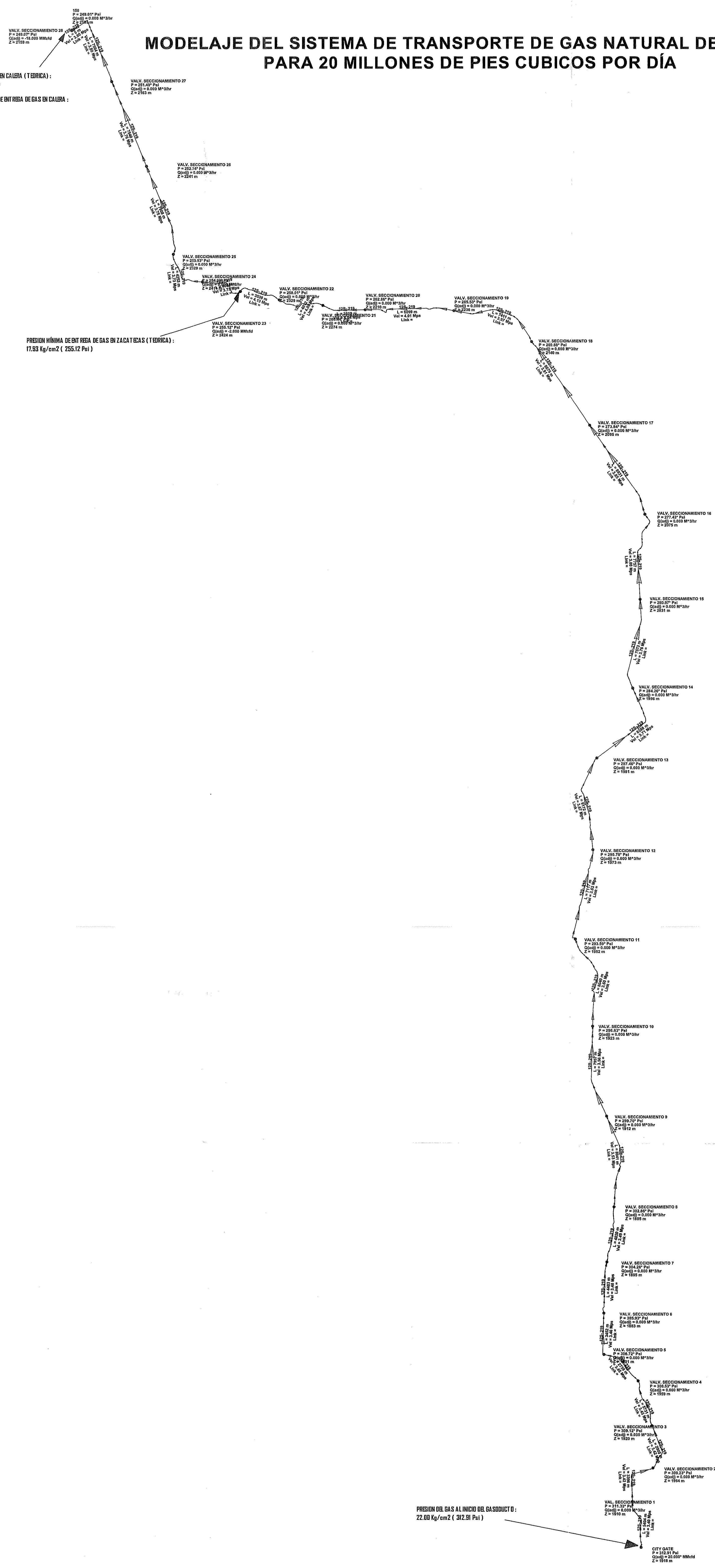
MODELAJE DEL SISTEMA DE TRANSPORTE DE GAS NATURAL DE ZACATECAS PARA 20 MILLONES DE PIES CUBICOS POR DÍA

PRESION DE ENT RISA DE GAS EN CALERA (TERRICA) :
17.51 Kg/cm² (249.07 Psi)

PRESION MÍNIMA REQUERIDA DE ENT RISA DE GAS EN CALERA :
7 Kg/cm² (99.56 Psi)

PRESION MÍNIMA DE ENT RISA DE GAS EN ZACATECAS (TERRICA) :
17.93 Kg/cm² (255.12 Psi)

PRESION DEL GAS AL INICIO DEL GAS DUCTO :
22.00 Kg/cm² (312.51 Psi)



c:\modelos\mod\DOT09\zacatecas\WAV-10\ZAC TRAY REAL\la 30 micras\Y 29 MM\CF\dotico zac4-13\MAY13-20 - Approximate Scale 1 in = 4000 m

Rec #	Node Name	Pressure	Pressure Units	Pressure Known	Base Load	External Load (Fixed)	External Load (Fixed)	Total Load	Load Units	Load Known	Adjust Base Q By DF	Base Load Status	Adjust Ext Q By DF	External Load Status	Elevation, m	Atm Pressure, Psi	Temperature, C	Temperature Known	Specific Gravity	Viscosity, Centipoise	Heating Value, Btu/lb	Specific Heat	Properties Known	X Coordinate, m	Y Coordinate, m	Rec'ds Type	Rel'n Status	Related Model	Related Node
1	VALV. SECCIONAMIENTO 28	233.21	Psi	No	0.000	0.000	0.000	-51.330	MWCM	Yes	Yes	On	Yes	On	2153	11.30	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	734925	2541544	None			
2	130	233.17	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	2153	11.30	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	734925	2541544	None			
3	VALV. SECCIONAMIENTO 27	243.86	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	2163	11.29	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	734925	2541544	None			
4	VALV. SECCIONAMIENTO 26	261.87	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	2241	11.18	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	741171	2623285	None			
5	VALV. SECCIONAMIENTO 25	278.85	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	2251	11.20	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	743378	2623289	None			
6	VALV. SECCIONAMIENTO 14	286.26	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	2251	11.20	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	743378	2623289	None			
7	VALV. SECCIONAMIENTO 23	286.80	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	2411	10.95	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	745464	2626517	None			
8	VALV. SECCIONAMIENTO 22	300.18	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	2424	10.83	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	748051	2629745	None			
9	VALV. SECCIONAMIENTO 21	316.99	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	2523	11.01	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	752369	2631881	None			
10	VALV. SECCIONAMIENTO 20	329.74	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	2714	11.14	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	759048	2638515	None			
11	VALV. SECCIONAMIENTO 19	344.43	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	2916	11.23	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	766628	2648145	None			
12	VALV. SECCIONAMIENTO 18	362.24	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	2938	11.19	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	767138	2648268	None			
13	VALV. SECCIONAMIENTO 17	390.71	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	3140	11.33	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	773718	2654230	None			
14	VALV. SECCIONAMIENTO 16	398.50	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	3256	11.39	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	776682	2656519	None			
15	VALV. SECCIONAMIENTO 15	413.58	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	3275	11.42	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	783244	2662721	None			
16	VALV. SECCIONAMIENTO 14	437.78	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	3381	11.48	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	788342	2668481	None			
17	VALV. SECCIONAMIENTO 13	442.07	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1966	11.53	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	782188	2485654	None			
18	VALV. SECCIONAMIENTO 12	457.57	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1981	11.55	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	779116	2479295	None			
19	VALV. SECCIONAMIENTO 11	469.40	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1973	11.56	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	778865	2472131	None			
20	VALV. SECCIONAMIENTO 10	482.55	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1965	11.56	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	777446	2464339	None			
21	VALV. SECCIONAMIENTO 9	494.75	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1923	11.64	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	773925	2457125	None			
22	VALV. SECCIONAMIENTO 8	507.17	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1912	11.65	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	770067	2449490	None			
23	VALV. SECCIONAMIENTO 7	513.71	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1883	11.69	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	760733	2441895	None			
24	VALV. SECCIONAMIENTO 6	520.23	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1855	11.68	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	750121	2432004	None			
25	VALV. SECCIONAMIENTO 5	524.47	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1883	11.69	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	770887	2430254	None			
26	VALV. SECCIONAMIENTO 4	528.47	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1901	11.67	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	779924	2429136	None			
27	VALV. SECCIONAMIENTO 3	535.45	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1959	11.59	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	782748	2429607	None			
28	VALV. SECCIONAMIENTO 2	537.58	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1920	11.64	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	782917	2429267	None			
29	VAL. SECCIONAMIENTO 1	544.17	Psi	No	0.000	0.000	0.000	0.000	MWCM	Yes	Yes	On	Yes	On	1964	11.58	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	784053	2419512	None			
30	CITY GATE	551.01	Psi	Yes	56.250	0.000	0.000	56.250	MWCM	No	Yes	On	Yes	On	1910	11.59	18.00	Yes	0.591	0.0000072	34938	1.31	Yes	782297	2418849	None			

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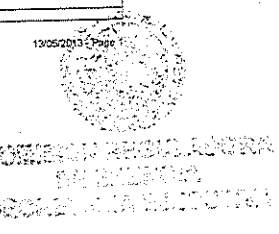
Rec #	From Node	To Node	ID Number	Link ID Number	Customer Count	Facility Type	Attribute Valve 1	Attribute Valve 2
1	VALV. SECCIONA	ISO	1			0 Unspecified		
2	VALV. SECCIONA	VALV. SECCIONA	2			0 Unspecified		
3	VALV. SECCIONA	VALV. SECCIONA	3			0 Unspecified		
4	VALV. SECCIONA	VALV. SECCIONA	4			0 Unspecified		
5	VALV. SECCIONA	VALV. SECCIONA	5			0 Unspecified		
6	VALV. SECCIONA	VALV. SECCIONA	6			0 Unspecified		
7	VALV. SECCIONA	VALV. SECCIONA	7			0 Unspecified		
8	VALV. SECCIONA	VALV. SECCIONA	8			0 Unspecified		
9	VALV. SECCIONA	VALV. SECCIONA	9			0 Unspecified		
10	VALV. SECCIONA	VALV. SECCIONA	10			0 Unspecified		
11	VALV. SECCIONA	VALV. SECCIONA	11			0 Unspecified		
12	VALV. SECCIONA	VALV. SECCIONA	12			0 Unspecified		
13	VALV. SECCIONA	VALV. SECCIONA	13			0 Unspecified		
14	VALV. SECCIONA	VALV. SECCIONA	14			0 Unspecified		
15	VALV. SECCIONA	VALV. SECCIONA	15			0 Unspecified		
16	VALV. SECCIONA	VALV. SECCIONA	16			0 Unspecified		
17	VALV. SECCIONA	VALV. SECCIONA	17			0 Unspecified		
18	VALV. SECCIONA	VALV. SECCIONA	18			0 Unspecified		
19	VALV. SECCIONA	VALV. SECCIONA	19			0 Unspecified		
20	VALV. SECCIONA	VALV. SECCIONA	20			0 Unspecified		
21	VALV. SECCIONA	VALV. SECCIONA	21			0 Unspecified		
22	VALV. SECCIONA	VALV. SECCIONA	22			0 Unspecified		
23	VALV. SECCIONA	VALV. SECCIONA	23			0 Unspecified		
24	VALV. SECCIONA	VALV. SECCIONA	24			0 Unspecified		
25	VALV. SECCIONA	VALV. SECCIONA	25			0 Unspecified		
26	VALV. SECCIONA	VALV. SECCIONA	26			0 Unspecified		
27	VALV. SECCIONA	VAL. SECCIONAM	27			0 Unspecified		
28	VAL. SECCIONAM	CITY GATE	28			0 Unspecified		
29	ISO	VALV. SECCIONA	29			0 Unspecified		



0303 14

COMISION REGULADORA DE ENERGIA SECRETARIA EJECUTIVA

Rec #	From Node	To Node	ID Number	Element Type	Status	Equation	Size Type	Inside D	Roughness	DR Units	Allow Calculation	Sizing Group	Length Units	Length	Efficiency, Decimal	Total Efficiency, Decimal	Attached Fittings	Equivalent Length	Flow Rate	Flow Units	Velocity	Reynolds Number	Volume, M3	Inlet Pressure	Outlet Pressure	Pressure Drop	Drop Per 100	Average Pressure	Hoop Stress	SMYS	Pressure Units	% SMYS	Z Factor	Venex Count
1	VALV. SECCIONAMIENTO 25	150	1	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	5	1.00	1.00	0	0	40453.000	M ³ /hr	17.00	8564480000	7.515	223.17	223.21	0.04	0.81	328.75	6457	35000	18.56	0.831001	0		
2	VALV. SECCIONAMIENTO 27	VALV. SECCIONAMIENTO 26	2	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7581	1.00	1.00	0	0	40453.140	M ³ /hr	11.80	8564480000	12876.540	20.87	243.86	17.81	0.24	252.86	7617	35000	21.76	0.522897	21		
3	VALV. SECCIONAMIENTO 26	VALV. SECCIONAMIENTO 25	3	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7581	1.00	1.00	0	0	40453.140	M ³ /hr	10.31	8564480000	14487.610	178.83	261.67	17.16	0.22	270.33	8117	35000	23.19	0.518148	21		
4	VALV. SECCIONAMIENTO 24	VALV. SECCIONAMIENTO 23	4	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	4283	1.00	1.00	0	0	40453.140	M ³ /hr	9.74	8564480000	8155.124	186.56	278.83	8.13	0.19	282.81	4383	35000	24.58	0.812517	37		
5	VALV. SECCIONAMIENTO 23	VALV. SECCIONAMIENTO 22	5	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	4283	1.00	1.00	0	0	40453.140	M ³ /hr	9.43	8564480000	7951.639	189.50	286.96	8.54	0.21	291.75	4502	35000	26.06	0.809003	36		
6	VALV. SECCIONAMIENTO 22	VALV. SECCIONAMIENTO 21	6	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	4012	1.00	1.00	0	0	40453.310	M ³ /hr	10.08	8564480000	7288.734	206.19	295.50	10.68	0.30	300.87	4913	35000	27.18	0.904279	12		
7	VALV. SECCIONAMIENTO 21	VALV. SECCIONAMIENTO 20	7	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	3815	1.00	1.00	0	0	40453.300	M ³ /hr	9.74	8564480000	6918.807	218.99	308.18	10.81	0.27	311.81	5222	35000	28.55	0.806262	24		
8	VALV. SECCIONAMIENTO 20	VALV. SECCIONAMIENTO 19	8	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	3296	1.00	1.00	0	0	40453.300	M ³ /hr	8.68	8564480000	18016.530	344.43	326.74	17.69	0.27	321.98	5911	35000	31.13	0.898691	13		
9	VALV. SECCIONAMIENTO 19	VALV. SECCIONAMIENTO 18	9	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7411	1.00	1.00	0	0	40453.300	M ³ /hr	6.27	8564480000	22246.880	382.73	352.24	18.49	0.21	377.56	11283	35000	33.13	0.898396	7		
10	VALV. SECCIONAMIENTO 18	VALV. SECCIONAMIENTO 17	10	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	8675	1.00	1.00	0	0	40453.300	M ³ /hr	7.88	8564480000	24110.870	586.30	380.73	11.57	0.20	406.97	12038	35000	34.40	0.882158	21		
11	VALV. SECCIONAMIENTO 17	VALV. SECCIONAMIENTO 16	11	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7267	1.00	1.00	0	0	40453.300	M ³ /hr	7.27	8564480000	22237.810	427.78	413.56	14.20	0.17	426.10	12877	35000	35.36	0.874700	17		
12	VALV. SECCIONAMIENTO 16	VALV. SECCIONAMIENTO 15	12	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7573	1.00	1.00	0	0	40453.300	M ³ /hr	7.03	8564480000	25560.880	442.37	427.78	14.61	0.17	436.10	13320	35000	36.79	0.870527	21		
13	VALV. SECCIONAMIENTO 15	VALV. SECCIONAMIENTO 14	13	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	8288	1.00	1.00	0	0	40453.300	M ³ /hr	6.80	8564480000	26609.070	457.57	427.78	15.20	0.17	450.01	13920	35000	38.06	0.867057	21		
14	VALV. SECCIONAMIENTO 14	VALV. SECCIONAMIENTO 13	14	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	9173	1.00	1.00	0	0	40453.300	M ³ /hr	6.58	8564480000	27658.430	489.40	427.78	15.83	0.16	471.90	14547	35000	39.44	0.862781	21		
15	VALV. SECCIONAMIENTO 13	VALV. SECCIONAMIENTO 12	15	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7117	1.00	1.00	0	0	40453.300	M ³ /hr	6.42	8564480000	27096.530	484.84	427.78	16.15	0.15	485.86	14401	35000	41.15	0.861349	9		
16	VALV. SECCIONAMIENTO 12	VALV. SECCIONAMIENTO 11	16	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	8040	1.00	1.00	0	0	40453.300	M ³ /hr	6.25	8564480000	27984.890	484.79	427.78	16.19	0.15	500.87	14785	35000	42.18	0.859271	14		
17	VALV. SECCIONAMIENTO 11	VALV. SECCIONAMIENTO 10	17	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7927	1.00	1.00	0	0	40453.300	M ³ /hr	6.10	8564480000	28664.790	507.17	427.78	16.44	0.15	516.98	14954	35000	42.73	0.857687	39		
18	VALV. SECCIONAMIENTO 10	VALV. SECCIONAMIENTO 9	18	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	8041	1.00	1.00	0	0	40453.300	M ³ /hr	5.95	8564480000	27848.240	519.74	427.78	16.95	0.14	510.45	14954	35000	43.27	0.854295	21		
19	VALV. SECCIONAMIENTO 9	VALV. SECCIONAMIENTO 8	19	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	4670	1.00	1.00	0	0	40453.300	M ³ /hr	5.88	8564480000	18291.130	522.23	427.78	17.23	0.12	522.23	15267	35000	43.62	0.852963	17		
20	VALV. SECCIONAMIENTO 8	VALV. SECCIONAMIENTO 7	20	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	4403	1.00	1.00	0	0	40453.310	M ³ /hr	5.78	8564480000	12068.160	494.47	427.78	17.62	0.12	522.23	15267	35000	44.18	0.852226	17		
21	VALV. SECCIONAMIENTO 7	VALV. SECCIONAMIENTO 6	21	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	4403	1.00	1.00	0	0	40453.310	M ³ /hr	5.61	8564480000	10301.790	526.47	424.47	18.01	0.07	528.47	15325	35000	44.93	0.850388	21		
22	VALV. SECCIONAMIENTO 6	VALV. SECCIONAMIENTO 5	22	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	2739	1.00	1.00	0	0	40453.310	M ³ /hr	5.48	8564480000	21809.670	536.45	424.47	18.38	0.18	530.97	15660	35000	44.74	0.849474	28		
23	VALV. SECCIONAMIENTO 5	VALV. SECCIONAMIENTO 4	23	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	2739	1.00	1.00	0	0	40453.310	M ³ /hr	5.32	8564480000	13006.240	537.88	424.47	18.75	0.19	536.72	15860	35000	45.24	0.848412	9		
24	VALV. SECCIONAMIENTO 4	VALV. SECCIONAMIENTO 3	24	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	2739	1.00	1.00	0	0	40453.310	M ³ /hr	5.16	8564480000	11171.170	544.17	424.47	19.12	0.18	541.20	15841	35000	45.74	0.847350	9		
25	VALV. SECCIONAMIENTO 3	VALV. SECCIONAMIENTO 2	25	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	1396	1.00	1.00	0	0	40453.310	M ³ /hr	5.06	8564480000	21267.840	544.17	424.47	19.49	0.18	547.60	16040	35000	46.24	0.846289	17		
26	VALV. SECCIONAMIENTO 2	VALV. SECCIONAMIENTO 1	26	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	5404	1.00	1.00	0	0	40453.310	M ³ /hr	4.91	8564480000	11912.740	544.17	424.47	19.86	0.17	554.99	16240	35000	46.74	0.845228	17		
27	VALV. SECCIONAMIENTO 1	CITY GATE	27	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7964	1.00	1.00	0	0	40453.140	M ³ /hr	4.76	8564480000	11912.740	544.17	424.47	20.23	0.21	563.66	16440	35000	47.24	0.844167	15		
28	VALV. SECCIONAMIENTO 1	VALV. SECCIONAMIENTO 27	28	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7964	1.00	1.00	0	0	40453.140	M ³ /hr	4.61	8564480000	11912.740	544.17	424.47	20.60	0.21	572.33	16640	35000	47.74	0.843106	15		
29	150	VALV. SECCIONAMIENTO 27	29	Pipe	On	Panhandle-B	125-219	12.312	0.00118	Inches	Yes	Group-1	7964	1.00	1.00	0	0	40453.140	M ³ /hr	4.46	8564480000	11912.740	544.17	424.47	20.97	0.21	581.00	16840	35000	48.24	0.842045	15		

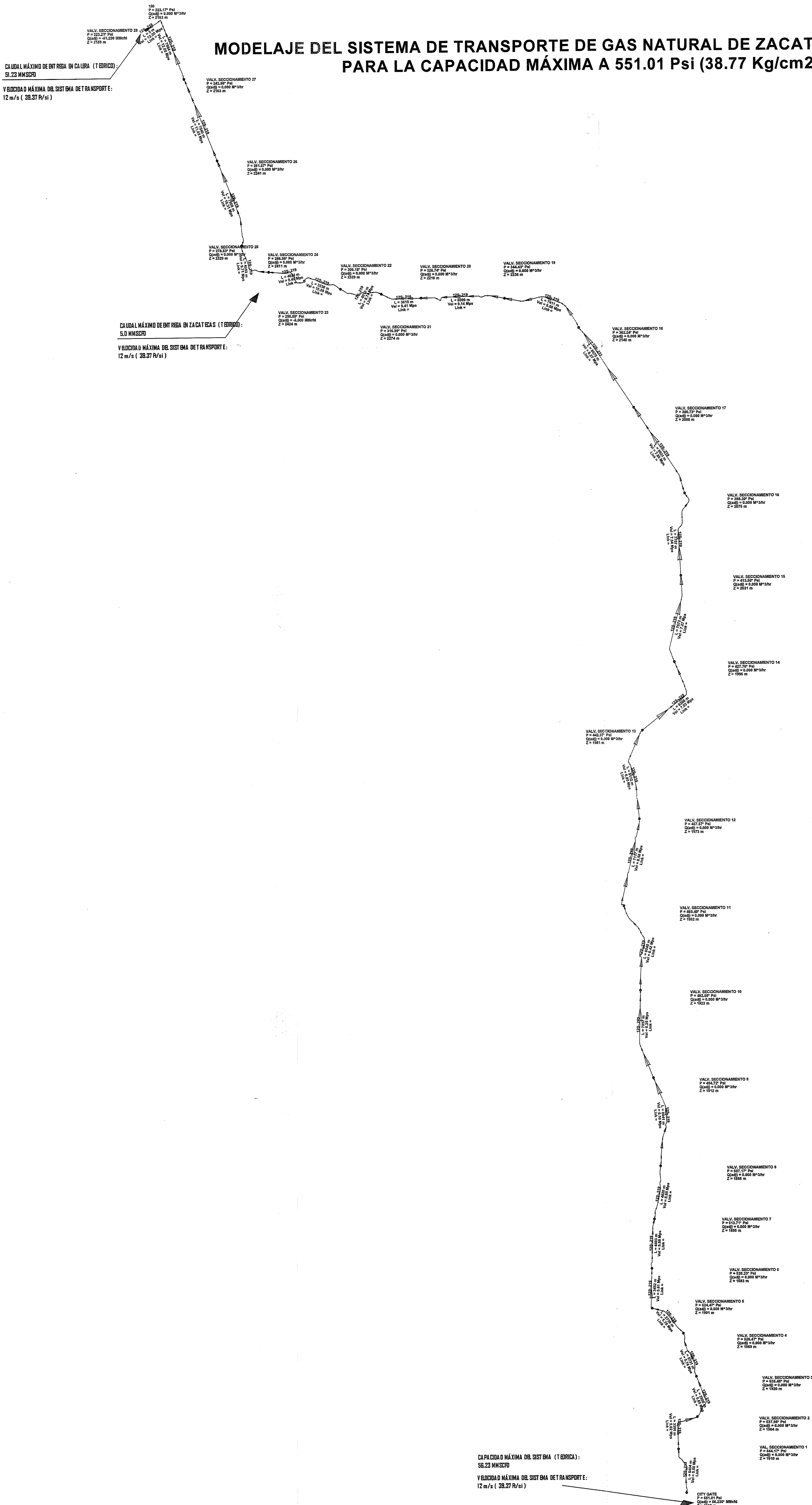


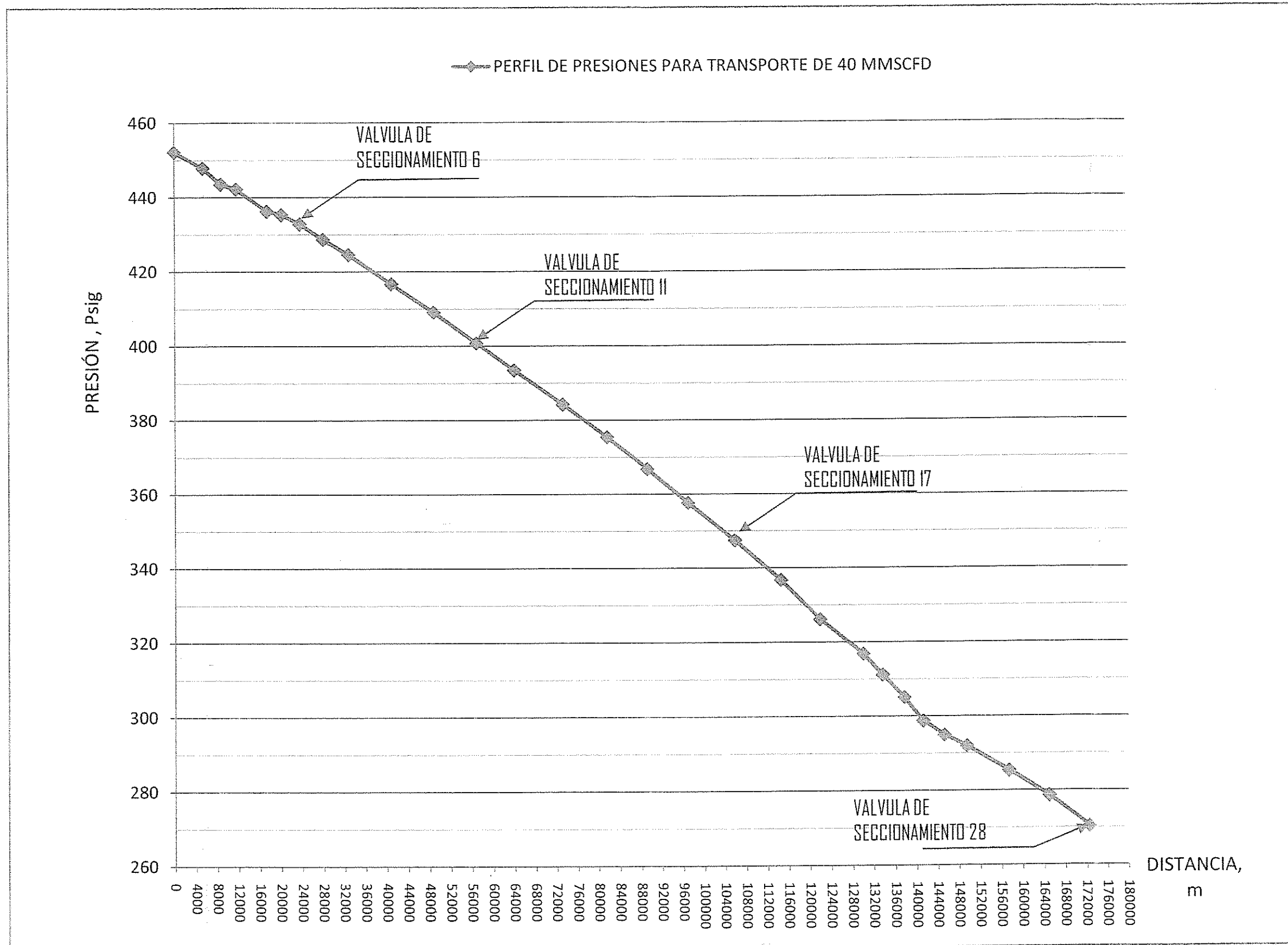
MODELAJE DEL SISTEMA DE TRANSPORTE DE GAS NATURAL DE ZACATECAS PARA LA CAPACIDAD MÁXIMA A 551.01 Psi (38.77 Kg/cm²)

CAUDAL MÁXIMO DE ENTREGA EN CALERA (TERRICO) SB.23 MMSCFD
VELOCIDAD MÁXIMA DEL SISTEMA DE TRANSPORTE: 12 m/s (38.37 R/s)

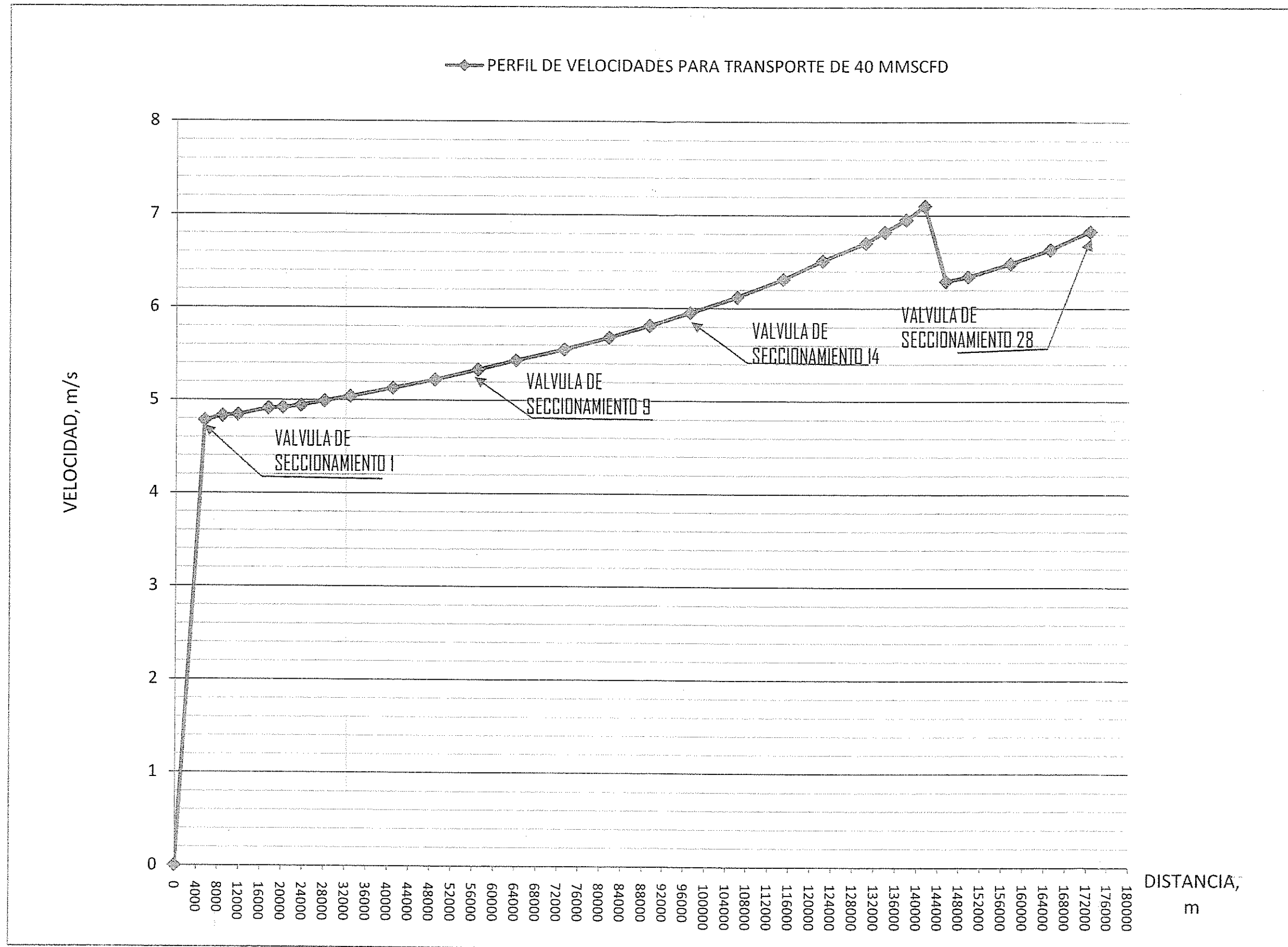
CAUDAL MÁXIMO DE ENTREGA EN ZACATECAS (TERRICO) 5.0 MMSCFD
VELOCIDAD MÁXIMA DEL SISTEMA DE TRANSPORTE: 12 m/s (38.37 R/s)

CAPACIDAD MÁXIMA DEL SISTEMA (TERRICA) SB.23 MMSCFD
VELOCIDAD MÁXIMA DEL SISTEMA DE TRANSPORTE: 12 m/s (38.37 R/s)

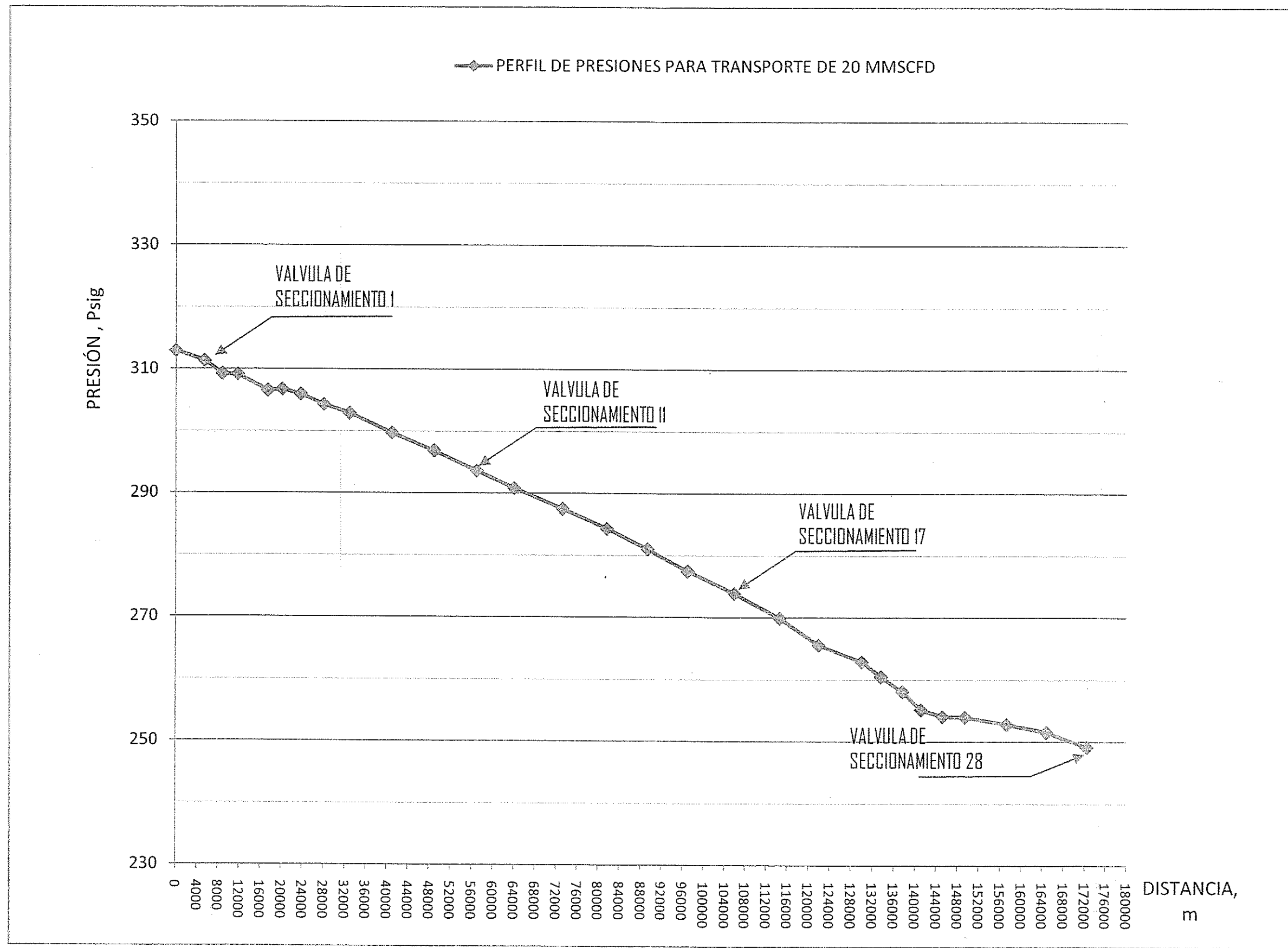




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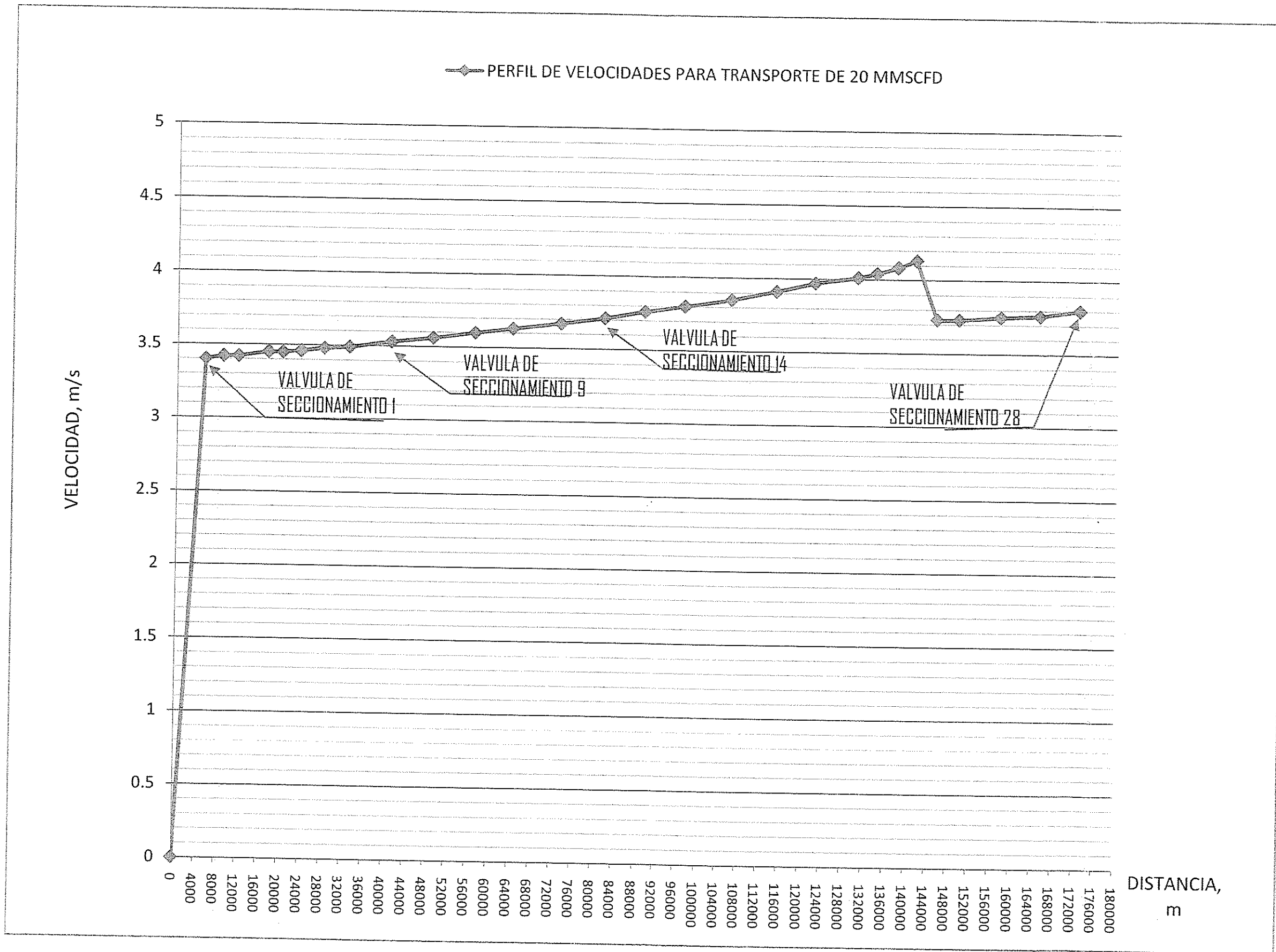


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Row #	Node Name	Pressure	Pressure Units	Pressure Known	Base Load	External Load	External Load (Fixed)	Total Load	Load Units	Load Known	Adjust Base G By DF	Base Load Status	Adjust Ext G By DF	External Load Status	Elevation, m	Air Pressure, Psi	Temperature, C	Temperature Known	Specific Gravity	Viscosity, centipoise	Heating Value, Btu/lb	Specific Heat	Properties Known	Z Coordinate, m	Y Coordinate, m	Node Type	Node Status	Related Work	Related Node
1	VALV SECCIONAMIENTO 28	270.35	Psi	No	0.000	0.000	0.000	-25.000	Mt/m3	Yes	Yes	On	Yes	On	2185	11.26	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	724025	2541044	None			
2	TSD	270.29	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2182	11.26	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	724026	2540031	None			
3	VALV SECCIONAMIENTO 27	275.50	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2183	11.26	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	724027	2537593	None			
4	VALV SECCIONAMIENTO 26	285.29	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2241	11.18	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	741171	2533326	None			
5	VALV SECCIONAMIENTO 25	291.94	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2254	11.06	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	743178	2529469	None			
6	VALV SECCIONAMIENTO 24	294.87	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	3411	10.59	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	748464	2526817	None			
7	VALV SECCIONAMIENTO 23	298.70	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2424	10.53	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	748041	2519715	None			
8	VALV SECCIONAMIENTO 22	300.21	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2339	11.06	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	732349	2514963	None			
9	VALV SECCIONAMIENTO 21	311.11	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2274	11.14	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	726526	2518515	None			
10	VALV SECCIONAMIENTO 20	316.91	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2210	11.23	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	736226	2518145	None			
11	VALV SECCIONAMIENTO 19	325.29	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2206	11.19	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	737128	2518268	None			
12	VALV SECCIONAMIENTO 18	326.97	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2142	11.23	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	729118	2514293	None			
13	VALV SECCIONAMIENTO 17	347.40	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2095	11.29	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	725922	2509312	None			
14	VALV SECCIONAMIENTO 16	357.59	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2075	11.42	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	725244	2500221	None			
15	VALV SECCIONAMIENTO 15	366.10	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	2021	11.48	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	723522	2493441	None			
16	VALV SECCIONAMIENTO 14	375.40	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1968	11.53	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	721125	2485836	None			
17	VALV SECCIONAMIENTO 13	384.20	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1961	11.56	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	720216	2479252	None			
18	VALV SECCIONAMIENTO 12	393.41	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1912	11.56	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	718465	2471731	None			
19	VALV SECCIONAMIENTO 11	402.74	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1922	11.59	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	717446	2464325	None			
20	VALV SECCIONAMIENTO 10	409.01	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1923	11.64	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	718225	2457125	None			
21	VALV SECCIONAMIENTO 9	416.91	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1912	11.65	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	720427	2449450	None			
22	VALV SECCIONAMIENTO 8	424.94	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1893	11.69	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	720701	2441922	None			
23	VALV SECCIONAMIENTO 7	428.67	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1895	11.68	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	720131	2434068	None			
24	VALV SECCIONAMIENTO 6	430.74	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1843	11.69	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	719997	2427954	None			
25	VALV SECCIONAMIENTO 5	436.29	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1921	11.67	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	719514	2423128	None			
26	VALV SECCIONAMIENTO 4	436.18	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1939	11.58	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	721748	2420927	None			
27	VALV SECCIONAMIENTO 3	442.12	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1920	11.64	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	721917	2420097	None			
28	VALV SECCIONAMIENTO 2	443.25	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1954	11.58	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	724203	2416573	None			
29	VAL SECCIONAMIENTO 1	447.74	Psi	No	0.000	0.000	0.000	0.000	Mt/m3	Yes	Yes	On	Yes	On	1910	11.65	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	722297	2414640	None			
30	CITY GATE	452.06	Psi	Yes	40.000	0.000	0.000	40.000	Mt/m3	No	Yes	On	Yes	On	1918	11.64	18.00	Yes	0.991	0.0000072	34936	1.31	Yes	720225	2412750	None			

0303 24

GRUPO EMPRESARIAL S.A.A.
CALLE 10 N. 10000
LIMA, PERU

Line #	From Node	To Node	ID Number	Element Type	Status	Equation	Size/Type	Inside D	Roughness	DR Units	Allow Calculation	Sizing Group	Length	Length Units	Efficiency, Decimal	Total Efficiency, Decimal	Attached Fittings	Equivalent Length	Flow Rate	Flow Units	Velocity, Mps	Reynolds Number	Volume, M ³	Inlet Pressure	Outlet Pressure	Pressure Drop	Drop Per 100'	Average Pressure	Hoop Stress	SMYS	Pressure Units	% SMYS	Z Factor	Vertex Count
1	VALV. SECCIONAMIENTO 28	150	1	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	9	m	1.00	1.00	0	0	-11301.190	M ³ /hr	6.83	407489000	9.153	319.29	270.28	0.08	1.31	270.28	78.70	35000	Psi	22.49	0.918101	0
2	VALV. SECCIONAMIENTO 27	VALV. SECCIONAMIENTO 28	2	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	7940	m	1.00	1.00	0	0	-11301.190	M ³ /hr	6.83	407489000	14419.590	288.29	278.58	8.70	0.09	288.29	8305	35000	Psi	23.73	0.914953	9
3	VALV. SECCIONAMIENTO 26	VALV. SECCIONAMIENTO 27	3	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	7906	m	1.00	1.00	0	0	-11301.190	M ³ /hr	6.83	407489000	15499.250	291.99	288.29	8.69	0.09	288.29	8459	35000	Psi	24.28	0.913171	21
4	VALV. SECCIONAMIENTO 25	VALV. SECCIONAMIENTO 26	4	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	4251	m	1.00	1.00	0	0	-11301.190	M ³ /hr	6.83	407489000	8472.068	284.87	281.26	3.61	0.07	281.26	8645	35000	Psi	24.82	0.911912	36
5	VALV. SECCIONAMIENTO 24	VALV. SECCIONAMIENTO 25	5	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	4594	m	1.00	1.00	0	0	-11301.190	M ³ /hr	6.83	407489000	9111.959	288.70	284.87	3.84	0.10	288.70	8895	35000	Psi	24.84	0.911522	37
6	VALV. SECCIONAMIENTO 23	VALV. SECCIONAMIENTO 24	6	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	3538	m	1.00	1.00	0	0	-1201.360	M ³ /hr	1.10	455702800	7281.108	325.02	298.70	6.93	0.18	301.87	8679	35000	Psi	25.37	0.909638	38
7	VALV. SECCIONAMIENTO 22	VALV. SECCIONAMIENTO 23	7	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	4912	m	1.00	1.00	0	0	-1201.360	M ³ /hr	6.85	455702800	8418.768	311.11	308.23	5.10	0.15	308.23	9046	35000	Psi	26.88	0.907964	39
8	VALV. SECCIONAMIENTO 21	VALV. SECCIONAMIENTO 22	8	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	3019	m	1.00	1.00	0	0	-1201.360	M ³ /hr	6.82	455702800	7748.219	318.81	311.11	5.70	0.16	313.07	9222	35000	Psi	26.55	0.906342	40
9	VALV. SECCIONAMIENTO 20	VALV. SECCIONAMIENTO 21	9	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	8099	m	1.00	1.00	0	0	-1201.360	M ³ /hr	6.70	455702800	17760.550	328.09	318.81	9.27	0.11	321.47	9492	35000	Psi	27.13	0.904333	41
10	VALV. SECCIONAMIENTO 19	VALV. SECCIONAMIENTO 20	10	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	7811	m	1.00	1.00	0	0	-1201.360	M ³ /hr	6.51	455702800	16807.780	338.67	328.09	10.99	0.14	331.41	9800	35000	Psi	28.00	0.902871	42
11	VALV. SECCIONAMIENTO 18	VALV. SECCIONAMIENTO 19	11	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	8973	m	1.00	1.00	0	0	-1201.360	M ³ /hr	6.71	455702800	20266.270	347.40	338.67	10.73	0.12	340.90	10119	35000	Psi	28.99	0.898629	43
12	VALV. SECCIONAMIENTO 17	VALV. SECCIONAMIENTO 18	12	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	8931	m	1.00	1.00	0	0	-1201.360	M ³ /hr	6.72	455702800	21828.390	357.89	347.40	10.18	0.11	352.82	10429	35000	Psi	29.74	0.896061	44
13	VALV. SECCIONAMIENTO 16	VALV. SECCIONAMIENTO 17	13	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	7757	m	1.00	1.00	0	0	-1201.360	M ³ /hr	5.99	455702800	18358.990	366.79	357.89	9.20	0.12	362.21	10677	35000	Psi	30.51	0.893507	45
14	VALV. SECCIONAMIENTO 15	VALV. SECCIONAMIENTO 16	14	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	7573	m	1.00	1.00	0	0	-1201.360	M ³ /hr	5.81	455702800	18403.670	378.40	366.79	8.81	0.11	371.11	10929	35000	Psi	31.21	0.891167	46
15	VALV. SECCIONAMIENTO 14	VALV. SECCIONAMIENTO 15	15	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	6389	m	1.00	1.00	0	0	-1201.360	M ³ /hr	5.68	455702800	20339.300	389.20	378.40	9.80	0.10	379.82	11164	35000	Psi	31.96	0.888911	47
16	VALV. SECCIONAMIENTO 13	VALV. SECCIONAMIENTO 14	16	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	9172	m	1.00	1.00	0	0	-1201.360	M ³ /hr	5.35	455702800	24719.840	399.47	389.20	9.41	0.10	389.82	11420	35000	Psi	32.72	0.886952	48
17	VALV. SECCIONAMIENTO 12	VALV. SECCIONAMIENTO 13	17	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	7117	m	1.00	1.00	0	0	-1201.360	M ³ /hr	5.43	455702800	19624.990	400.74	399.47	7.34	0.10	397.29	11699	35000	Psi	33.23	0.884411	49
18	VALV. SECCIONAMIENTO 11	VALV. SECCIONAMIENTO 12	18	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	8646	m	1.00	1.00	0	0	-1201.360	M ³ /hr	5.31	455702800	22941.450	409.01	400.74	8.26	0.10	404.89	11909	35000	Psi	34.02	0.882324	50
19	VALV. SECCIONAMIENTO 10	VALV. SECCIONAMIENTO 11	19	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	7987	m	1.00	1.00	0	0	-1201.360	M ³ /hr	5.22	455702800	23895.930	418.61	409.01	7.80	0.10	413.80	12127	35000	Psi	34.65	0.880353	51
20	VALV. SECCIONAMIENTO 9	VALV. SECCIONAMIENTO 10	20	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	8841	m	1.00	1.00	0	0	-1201.360	M ³ /hr	5.13	455702800	25614.140	424.54	418.61	7.93	0.10	420.99	12268	35000	Psi	35.21	0.878361	52
21	VALV. SECCIONAMIENTO 8	VALV. SECCIONAMIENTO 9	21	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	4823	m	1.00	1.00	0	0	-1201.360	M ³ /hr	5.04	455702800	14378.490	428.57	424.54	4.05	0.09	426.55	12476	35000	Psi	35.84	0.876361	53
22	VALV. SECCIONAMIENTO 7	VALV. SECCIONAMIENTO 8	22	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	4403	m	1.00	1.00	0	0	-1201.360	M ³ /hr	4.99	455702800	13271.550	436.74	428.57	4.18	0.09	430.66	12697	35000	Psi	36.39	0.874392	54
23	VALV. SECCIONAMIENTO 6	VALV. SECCIONAMIENTO 7	23	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	3407	m	1.00	1.00	0	0	-1201.360	M ³ /hr	4.94	455702800	10454.200	436.29	436.74	3.55	0.07	434.02	12871	35000	Psi	36.90	0.872490	55
24	VALV. SECCIONAMIENTO 5	VALV. SECCIONAMIENTO 6	24	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	2729	m	1.00	1.00	0	0	-1201.360	M ³ /hr	4.92	455702800	8361.737	436.18	436.74	0.69	0.05	436.74	12987	35000	Psi	37.38	0.870518	56
25	VALV. SECCIONAMIENTO 4	VALV. SECCIONAMIENTO 5	25	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	3731	m	1.00	1.00	0	0	-1201.360	M ³ /hr	4.91	455702800	17648.540	442.12	436.18	9.84	0.10	438.18	13079	35000	Psi	36.77	0.872855	57
26	VALV. SECCIONAMIENTO 3	VALV. SECCIONAMIENTO 4	26	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	3900	m	1.00	1.00	0	0	-1201.360	M ³ /hr	4.84	455702800	9010.760	444.48	442.12	1.33	0.05	442.79	13000	35000	Psi	36.88	0.872139	58
27	VALV. SECCIONAMIENTO 2	VALV. SECCIONAMIENTO 3	27	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	3596	m	1.00	1.00	0	0	-1201.360	M ³ /hr	4.83	455702800	10626.070	447.74	444.48	3.29	0.13	448.80	13004	35000	Psi	37.48	0.870226	59
28	VALV. SECCIONAMIENTO 1	CITY GATE	28	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	5404	m	1.00	1.00	0	0	-1201.360	M ³ /hr	4.78	455702800	12900.970	451.08	447.74	4.35	0.08	448.98	13129	35000	Psi	37.60	0.870261	60
29	150	VALV. SECCIONAMIENTO 27	29	Pipe	On	Pantallón-B	125-219	12.312	0.0018	Inches	Yes	Group-1	7564	m	1.00	1.00	0	0	-11301.190	M ³ /hr	6.83	407489000	14066.900	378.59	270.29	8.30	0.11	274.46	8110	35000	Psi	23.17	0.918974	15

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Rec #	From Node	To Node	ID Number	Link ID Number	Customer Count	Facility Type	Attribute Valve 1	Attribute Valve 2
1	VALV. SECCIONA	150	1		0	Unspecified		
2	VALV. SECCIONA	VALV. SECCIONA 1	2		0	Unspecified		
3	VALV. SECCIONA	VALV. SECCIONA 3	3		0	Unspecified		
4	VALV. SECCIONA	VALV. SECCIONA 4	4		0	Unspecified		
5	VALV. SECCIONA	VALV. SECCIONA 5	5		0	Unspecified		
6	VALV. SECCIONA	VALV. SECCIONA 6	6		0	Unspecified		
7	VALV. SECCIONA	VALV. SECCIONA 7	7		0	Unspecified		
8	VALV. SECCIONA	VALV. SECCIONA 8	8		0	Unspecified		
9	VALV. SECCIONA	VALV. SECCIONA 9	9		0	Unspecified		
10	VALV. SECCIONA	VALV. SECCIONA 10	10		0	Unspecified		
11	VALV. SECCIONA	VALV. SECCIONA 11	11		0	Unspecified		
12	VALV. SECCIONA	VALV. SECCIONA 12	12		0	Unspecified		
13	VALV. SECCIONA	VALV. SECCIONA 13	13		0	Unspecified		
14	VALV. SECCIONA	VALV. SECCIONA 14	14		0	Unspecified		
15	VALV. SECCIONA	VALV. SECCIONA 15	15		0	Unspecified		
16	VALV. SECCIONA	VALV. SECCIONA 16	16		0	Unspecified		
17	VALV. SECCIONA	VALV. SECCIONA 17	17		0	Unspecified		
18	VALV. SECCIONA	VALV. SECCIONA 18	18		0	Unspecified		
19	VALV. SECCIONA	VALV. SECCIONA 19	19		0	Unspecified		
20	VALV. SECCIONA	VALV. SECCIONA 20	20		0	Unspecified		
21	VALV. SECCIONA	VALV. SECCIONA 21	21		0	Unspecified		
22	VALV. SECCIONA	VALV. SECCIONA 22	22		0	Unspecified		
23	VALV. SECCIONA	VALV. SECCIONA 23	23		0	Unspecified		
24	VALV. SECCIONA	VALV. SECCIONA 24	24		0	Unspecified		
25	VALV. SECCIONA	VALV. SECCIONA 25	25		0	Unspecified		
26	VALV. SECCIONA	VALV. SECCIONA 26	26		0	Unspecified		
27	VALV. SECCIONA	VALV. SECCIONA 27	27		0	Unspecified		
28	VAL. SECCIONA	CITY GATE	28		0	Unspecified		
29	TSO	VALV. SECCIONA 29	29		0	Unspecified		



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MODELAJE DEL SISTEMA DE TRANSPORTE DE GAS NATURAL DE ZACATECAS PARA 40 MILLONES DE PIES CUBICOS POR DÍA

PRESION DE ENTREGA DE GAS EN CALERA (TERRICA):
 19.01 Kg/cm² (270.55 Psi)
PRESION MÍNIMA REQUERIDA DE ENTREGA DE GAS EN CALERA :
 7 Kg/cm² (99.56 Psi)

PRESION MÍNIMA DE ENTREGA DE GAS EN ZACATECAS (TERRICA):
 21.00 Kg/cm² (298.70 Psi)

PRESION DEL GAS AL INICIO DEL GASODUCTO :
 31.78 Kg/cm² (452.08 Psi)

